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THE DURABILITY OF THE THERAPEUTIC EFFECTS OF HIGH FREQUENCY CURRENTS.

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The treatment of various forms of diseased conditions of the body by means of electricity has for many years been employed by physicians as a curative agency, and we are all more or less acquainted with the ordinary forms of applying electricity, viz.: by the interrupted and continuous currents or by the static method. It is only however within recent years that physicians have learned to employ electrical currents of high frequency and potency, and the application of these high frequency currents is at present engaging much attention. While we are indebted to the careful observations of Elihu Thomson, Tesla and Hertz, it is to D'Arsonval the French biological physicist that we owe our present practical knowledge of the influence of these high frequency currents on the human body, and with a view to recognizing that he was the introducer of this form of electricity the application of the high frequency currents frequently goes by the name of "D'Arsonvalization."

It is perhaps unnecessary here to describe the apparatus since so many are acquainted with it, but I may mention that the current derived from the main first of all passes through a switchboard to which are attached a voltmeter and ammeter for the purpose of informing the operator of the amount of pressure and volume in use, and also of keeping under control the force of electricity. The current then passes through an interrupter of which various forms are in use, the object of which is to break the current very rapidly. The electric current then is conveyed to the coil where the low voltage current is transformed by means of induction into one of high voltage. Thence the current is conducted to the high frequency apparatus composed of two condensers where the currents of high frequency and high potency are generated. These currents leap from one condenser to the other through the spark gap as it is called, oscillating from the one to the other with enormous rapidity and at the same time with opposite polarity. The force here, however, is too great for safe employment. Accordingly we deal in medicine only with the induced current that originates on the outer side of the condensers which oscillate in similar fashion to those that leap across the spark gap. These induced currents again are connected with the resonator where amplification of the electric waves occur. The current is afterwards brought to the condensation couch passing through in its course the meter which indicates the amount of milliamperage in use. The patient who lies on the couch holding the handles is in direct communication with one wire, while the other wire is connected with metallic plates underneath the couch. A well padded cushion separates the patient, who practically forms one side of the condenser, from the metallic plate which forms the other side, the patient accordingly becoming alternately the positive and negative side of the condenser. No sensation is experienced as the nervous system is unable to appreciate electrical vibrations that number millions per second.

The physiological effects of these high frequency currents is not yet fully understood, but from experience and observation it is recognized that among other results there occur a fall in the arterial tension, an increased action of the skin, an increase in the amplitude of respiration, an improvement in the nutritive processes of the body, and an in-

creased metabolism and elimination of urea and other waste products.

My experience of the use of the high frequency currents dates back from a period of only 19 months, and though like others, I have hesitancy in referring too strongly to the permanence of the benefits derived from the high frequency currents, owing to the brief time this form of treatment has been employed still, I venture to think that I am now in a position to give instances of a few cases that have undoubtedly benefited permanently from the use of these currents.

In November, 1902, I was consulted by a farmer weighing over 250 pounds who had been troubled with sciatica of the right lower limb for six months. The pain was constant and he was unable to lie, still less to turn in bed without suffering. Before treating a case of sciatica it is important to satisfy oneself that the pain is due to neuralgia of the nerve itself, and not to a perineuritis, where in addition to an affected nerve, adhesions of the nerve sheath have formed. In such cases the pain is chiefly or only felt on movement of the limb due to the dragging of the adhesions on the nerve. When such a condition is present neither high frequency nor any other form of electrical current will cure the patient. Operation is required; the nerve has to be stretched and the adhesions separated. Recognizing that in the case now referred to I had to deal simply with a neuralgia, I applied the high frequency currents and after eight visits the patient was cured. I was able to flex the thigh on the abdomen without pain and the man himself could adopt all attitudes capable of putting the nerve on the stretch without discomfort; in short, from being a comparative cripple he was dismissed in a condition quite fit for his work as a farmer. I saw this patient on March 1, 1904, about 15 months after treatment, when he told me that he had had no pain since he had been treated, although he had been exposed to hard work and all kinds of weather.

This good farmer has spread the fame of the high frequency currents in his country village and as a result a number of his friends have consulted me all of whom I am glad to say for my credit's sake, have derived benefit. One of these was a mason of about 50 years of age who during many years had been liable to frequent and sudden attacks of lumbago. He came in November, 1903, suffering from an acute attack which he supposed was due to a "rack," as we call it in Scotland, or twist while lifting stones. With five applications all pain was removed and I saw him in the middle of the month of March, 1904, when he told me he had been perfectly free from all pain since he was treated four months previously.

Another case of sciatica with lumbar pain and stiffness at the knees occurring in a lady weighing 186 pounds, was treated by me in June, 1903. After a short course of treatment the pain over the sciatic nerve and gluteal region ceased, the knees became much less painful and she was able to go up and down stairs, to rise from her chair without pain, and to play golf during the Autumn months. I heard of her in February, 1904, eight months after treatment, and learned with satisfaction that she was very well and free from all sciatic pain.

I may refer to still another case of sciatica where the improvement promises to be permanent. The lady in question was suffering in the first instance from marked rheumatoid arthritis, a condition which in my experience does not yield to electricity, but in addition for many years had locomotion impeded on account of pain over the right sciatic nerve; she also had pain in the right shoulder. She was treated by me in January, 1903. At the end of February, 1904, she wrote me that she had experienced the best winter she had had for years, that since December she had had only two or three twinges and for the last few months the pain over the right shoulder which for a long period resisted the influence of the electric currents; had at last disappeared and had been entirely away for three months. From being a comparative cripple before treatment she is now "able to go up and down stairs twenty times a day without ever feeling any ill effects."

It has been generally found by those who employ high frequency currents that cases

of internal haemorrhoids yield to this form of electrical treatment. Not only is the condenser couch used but an electrode is passed into the rectum, a proceeding entirely unaccompanied by pain. I have dealt with many such cases and in almost all of them I have been successful. I will merely relate my experience with the first case that came under my care.

A gentleman about 40 years of age was sent to me in September, 1902, suffering from haemorrhoids which had troubled him more or less for 15 years. On the present occasion however he had had a sudden attack while making a long journey and arrived at his own house suffering great pain. The haemorrhoids had appeared externally and there was much local congestion and bleeding. The ordinary local measures were at first employed but when the patient was able to move he was sent to me for treatment by his doctor. After eight visits he had no more bleeding and no pain either when walking or at stool. The doctor who had sent him to me told me that on examining him after I had discontinued treatment, he was surprised to find that the piles had lost their velvety character and had become hardened and shrivelled. Five months later the doctor wrote me that he had again examined the patient and had found the haemorrhoids to have further contracted and to be still no source of trouble. I saw the patient myself in February of this year, 17 months after he had been treated, when I was gratified to learn that he had had no return of his haemorrhoids.

While referring to haemorrhoidal cases I may say that in varix of the legs marked improvement usually occurs with this form of treatment. It has usually been held that the high frequency currents have special influence on the vasomotor system and I have had reason from personal observation to believe this.

In September, 1902, I treated my first case of varicose veins. The patient was a lamplighter who had daily many miles to walk. The veins at that time were swollen and tense, and there was present a moist eczema with intolerable heat and irritation. A somewhat prolonged course of treatment was required but at the termination of the course the heat, irritation and pain had disappeared and though the veins were of course still large they were by no means so tense as they had been at first. I saw this man in the middle of March, active in his work, and he declared himself "first rate."

In the same month my second case of varix of the legs presented itself in the person of a very stout lady of about 46 years of age. Before treatment she was unable to walk or even to stand without great discomfort which also continued during the night and prevented sleep. After several visits she was able to move about with ease and even to climb stairs without complaint.

The beneficial effects on her generally can be well understood, for free locomotion during the day and undisturbed nights gave rise to an improved state of her general health. She was one of the patients, too, who suffered from haemorrhoids and the improvement in the varicose conditions both of limbs and of bowels was equally marked. I saw this same lady in October, 1903, thirteen months after she was first treated. She was then suffering from an acute attack of rheumatic neuralgia of the shoulder. A short course of high frequency treatment speedily removed the pain and I was gratified to learn from her then that since she was first treated neither the varix of the legs nor of the haemorrhoidal vessels had given her any trouble.

It has been found by some that high frequency currents have a curative effect on skin diseases, such as eczema, psoriasis, etc. A very marked case of the latter came to me in November, 1902. The disease was widespread, but was especially in evidence over the lumbar and gluteal regions and the lower limbs. The patient, a lady of about 55 years of age, had in addition polyuria, 150 ounces of urine without any trace of albumen or sugar being passed daily, and besides she suffered from great insomnia, possibly due to the skin irritation, and general nervousness. She was almost entirely confined to bed, the distribution of the skin eruption preventing her from walking or sitting with any comfort. The disease yielded in a most remark-

able fashion. Very shortly after commencing treatment the scales began to be shed, and clear skin to appear through the patches, till finally, after about twenty-four visits, the eruption had almost entirely disappeared from the legs, and the large patches over the hips had greatly cleared up. Further, the quantity of urine voided fell to about 50 ounces in twenty-four hours; the insomnia gave way to great desire for sleep, so that the patient not only slept continuously for hours during the night, but was disposed to be somewhat sleepy during the day; the general irritability also greatly lessened, and she became much more cheerful in manner. Locomotion was so much improved that she was able to walk with ease and the improvement in her general health was very noticeable. Unfortunately she was suffering at the time from malignant disease which eventually caused her death several months afterwards, but the eruption never recurred. I am quite aware that psoriasis not uncommonly disappears spontaneously, yet in this case, though the eruption had been continuously present for several years, it began to disappear so markedly immediately on the commencement of the treatment, that it is impossible to avoid the conclusion that the benefit was due to the high frequency currents.

In cases of lupus erythematosus discoides, in acne of the face, and in eczema punctata affecting the whole body I have likewise had delightful and permanent results.

As we are all aware, asthma has many causes and manifestations. I have had for many years while in general practice under my care, a clergyman who was very frequently and particularly after preaching, troubled with an attack of asthma. In the early morning, this has necessitated his sitting up in bed to breathe and to cough. Treatment by the ordinary methods failed to give relief except when he was able to take a holiday, when the asthma never annoyed him. Recognizing that his attacks were neurotic in origin, I suggested to him as soon as I became possessed of the high frequency apparatus, to submit himself to the currents. This was in September, 1902. Very speedily the asthma ceased to trouble him, and except during an attack of influenza when his nervous system was depressed, he has hardly ever been troubled with his old complaint. By way of precaution I may add however, that on Sunday nights, after a hard day's work, I occasionally give him a sitting with the result that he goes home at 9 P. M. freshened up, hungry for his supper, and that afterwards he sleeps, as he says, "like a top the whole night through."

Peripheral neuritis is another nervous affection which yields happily to the high frequency currents. A married lady came to me at the end of April, 1903, suffering from facial paralysis, ptosis, giddiness, headaches, loss of sensation in different parts of the body, chiefly in the lower extremities and the right thumb. She was able to walk only with difficulty, was depressed in spirits and unable to attend to her duties at home. She made rapid progress under treatment and in March of this year when I last saw her, she declared she was quite well. All the old unpleasant symptoms were absent and she was thoroughly fitted for all her home duties.

From personal experience in dealing with a number of cases suffering from headache of nervous origin, I am now in a position to give a hopeful prognosis. A married lady of over thirty consulted me in June, 1903, complaining of headaches which had troubled her more or less since she was a girl, but especially during the last 14 months. A restful night's sleep had been denied her for a long time. In little more than three weeks after treatment was commenced the headaches had entirely ceased; she slept ten hours on a stretch at night and though she has come through a pregnancy and has had occasion to nurse sick children at home, she is still quite well, sleeping soundly and continuing free from headaches.

A pleasing feature of the beneficial results of the high frequency currents experienced in cases of insomnia when sleeplessness is one of several symptoms complained of is that it almost invariably yields to electrical treatment, but one case I may specially notice of a young lady who was in good health except that she had been troubled with insomnia for several years. She had in all forty-two treat-

ments; improvement was gradual but undoubted, and now I learn that sleep and she are good friends and that as a result she is enabled thoroughly to enjoy life.

I was greatly struck with the immediate, and so far as I can judge, permanent benefit derived from the introduction of the rectal electrode in two cases of fissure of the anus. One of them had suffered pain on defoecation for two years but was relieved after a very few doses and remained cured till his death three months afterwards from heart disease.

The other was a gentleman who came to me at the very commencement of January of this year. He had been a sufferer from fissure for many years and during the last 18 months had suffered acutely at every action of the bowels. After two doses he had a normal evacuation without any pain. He had in all eight sittings and since treatment was discontinued he has been quite well.

Even in obstinate constipation the high frequency currents give rise to most satisfactory results.

A healthy young gentleman of 25 came to me at the commencement of December, 1903, suffering from constipation which required daily doseage. From the first day of treatment purgative medicine was stopped, as the sponge electrode applied to the surface of the abdomen caused a natural evacuation and I dismissed him after sixteen sittings. He has not required to resort again to any medicinal assistance.

It will be seen from the foregoing cases that while sufficient lapse of time has not occurred to permit of reference to them with certainty as being cured, still they demonstrate that so far as the present time will permit, the high frequency currents have produced permanent results.

A CONTRIBUTION TO THE DIAGNOSIS AND TREATMENT OF THE SURGICAL DISEASES OF THE URETER AND KIDNEYS.*

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1. Hematuria. Nephrotomy. Recovery.—Patient, forty-five years old, gave the following history: Had pleurisy, pronounced as tuberculosis, in 1895. In 1896, ascites, which yielded to internal medication. Malarial fever, recurring in intervals, from 1883 to 1892. In March, 1902, hematuria, accompanied with tenesmus at times. Rest in bed for several days reduced the quantity of blood materially, sometimes so much that the urine, macroscopically at least, seemed to be almost clear, but the hematuria returned very soon after the patient was up and around for a few hours.

Examination, October 10, 1902.

Inguinal glands and external genitals apparently normal. So is the prostate, and the seminal vesicles, which are outlined without difficulty, the patient being thin and emaciated. No tenderness over both ureters and kidneys. The left kidney distinctly larger and more resistant than the right one. Heart and lungs normal. No family history of consumption or malignant growth, nor of a preceding lues, or a trauma. The urethral wall, seen through the urethroscope, appears normal. So is the bladder, inspected through the cystoscope. From the right ureter, clear urine is secreted, while bloody urine is emitted from the left side. Ureter catheter, No. 8, French scale, is passed without difficulty into the renal pelvis, and from there the bloody urine collected for examination. The same procedure on the right kidney furnishes clear urine. The next to do, was to find the origin of the hematuria, of which, excluding a gumma of the kidney, and the still hypothetical essential hematuria, there remained as the more common probable cause tuberculosis, stone, malignant growth, or nephritis.

The result of the examination of both urines by the Columbus Laboratory is given here:

Urine from Right Kidney.—Clear, amber color, very little mucin, stained slides negative, few leucocytes, few epithelial cells. Urea, one per cent. Freezing point, 1.8° C.

Urine from Left Kidney.—Cloudy, reddish color, albumin present, stained slides show leucocytes, epithelium, few single cocci; tubercle bacilli absent. Blood present, five-tenths per cent. Pus absent, numerous

*Read at 53d Annual Meeting, Chicago, May 30, 1903

epithelial cells. Urea, 1.1 per cent. Freezing point, 1.6° C.

In the skiagraph taken, the following day, you will notice a shadow, the density and position of which might permit the diagnosis of a calculus of the ureter caught at its third narrowing in the bladder wall, but closer study of the comparative proportions of this pelvis will make it evident that the shadow is not a ureter calculus. The distance of each ureter from the median line is less than one inch. If in this case this distinct shadow was a ureter stone, it ought to be about midway between the median line and where it appears on the picture. A second exposure, made four days afterwards, showed the same condition. Inasmuch as I had no difficulty in passing a ureter catheter up the ureter, and obtained the bloody urine direct from the renal pelvis, I thought myself justified in eliminating the existence of a stone in the vesical portion of the ureter, or its possible bearing on the hematuria.

To get to the cause of the latter, I made a lumbar incision, October 15th, and found a very large, congested, cyanotic kidney, but macroscopically nothing pathologic on its surface, nor on the cut surface of the parenchyma, in the calices or the renal pelvis. A good-sized elastic bougie was easily passed down the ureter into the bladder without encountering an obstruction. The urine was closely inspected for three weeks following the operation, but no concrement found, neither could a stone be seen in a subsequent cystoscopic inspection of the bladder cavum.

Patient is gaining in weight since he left the hospital. The urine cleared up in the second week after the nephrotomy, and has remained free from albumin and blood, both macroscopically and microscopically. If one had relied upon the X-Ray picture alone, the result would have been at least an unnecessary searching for the calculus through a supra-pubic opening, and an incision in the vesical end of the ureter. But aside of this X-Ray fallacy, and its possible consequences, there is another point of interest attached to the case and its present termination. It brings up again the question, is there such a condition as "essential hematuria," or are all hemorrhages from the kidney symptomatic, as most of the writers believe?

In analyzing the many reports on essential hematuria, especially those in which an anatomical examination followed the clinical observations, there were hardly any found in which the upper urinary tract was normal. In most of them, nephritic lesions existed, sometimes so small that they were not considered as the cause of the hematuria. It is also of interest to know that in a proportion of cases of nephritis, complicated with hematuria, the urine examination gave a negative result, while a subsequent anatomical investigation of the extirpated kidney proved the presence of this pathological condition. Not less significant is the fact that hematuria is, in a number of cases, the only early symptom of renal disease, preceding all others sometimes for years.

When, in this case, all methods of examination before and during the operation have failed to demonstrate a palpable pathological condition, such as tuberculosis, new growth, stone or nephritis, in an advanced stage, I do not deny the possibility of the manifestations of either of them in the future, though the small amount of albumin in the urine and the cyanotic and congested condition of the parenchyma might point to an early stage of nephritis. If it be so, the present termination of the case corroborates the importance of nephrotomy in certain cases of this kind.

2. Ureteral Calculus of an Unusual Size.—The second skiagraph is taken from a patient, thirty-one years old, whom I saw, November 20, 1892.

He gave a history of gonorrhea, complicated by prostatitis, cystitis and epididymitis ten years ago. Three years later, dull pain in the left iliac region, at times increasing to real paroxysms, lasting for several hours. The first urine after such attacks contained large quantities of pus, while the urine voided in the free intervals was apparently clear. Tenesmus and frequent urination were and are present most of the time. He was operated for stricture, without being benefited, some time ago; local treatment of the

bladder also failed to relieve him. I found, upon renal palpation, a large atonic prostate, and high up, to the left side, a hard mass, corresponding in size with the dense shadow seen in the skiagraph. Through the urethroscopic tube some pus was noticed emanating from the left seminal duct. Cystoscopically, the bladder wall seems of normal appearance, with the exception of a narrow strip of a hyperemic area, extending from the vesical sphincter through the trigone to the left ureter. A ureter catheter introduced into the latter was arrested at a distance of one inch and a quarter from its vesical opening. The obstruction is caused by the calculus, as it appears in the skiagraph. Its diameters are one and one-eighth by seven-eighths inches. Unusual is the origin of the stone. It is a true ureter stone, presumably produced by an ascending gonorrheal or mixed infection, as the direction of the hyperemic zone in the trigone would indicate. Unusual is also its size, and it is remarkable to what extent the ureter may be distended, whose canal in this locality has a diameter of but four millimeters. It is further of interest that outside of the attacks of colic the urine is draining in a good stream alongside such an obstruction, as I could observe through the cystoscope, on the distinct typical jets emitted in frequent intervals.

The peculiar location of the stone renders the operation rather difficult. The perineal route is, for good reasons, not very favorably thought of. The ilioinguinal incision, the extra-peritoneal route, does not give much space to work so deep in the pelvis, and the trans-peritoneal method is not without danger, more so on account of a possible infection than the remote chance of urine leakage. I propose, after removing the stone in this way, to leave a ureter catheter *a demeur* in the renal pelvis, close, as far as the thin and disintegrated wall should permit, the ureter by Lembert sutures, and unite the parietal peritoneum over it, leaving a drain in the cavity, for a few days, meanwhile draining all the urine from the left kidney, until the wound in the peritoneum is firmly closed.

So far the patient is not ready for any operation; as he informed me, some time ago, he is trying to dissolve the stone by a certain mineral water, but promised to return if the water fails.

3. Renal Tuberculosis.—In February, 1902, I was consulted by a patient, forty years old, who gave a history of repeated attacks of gonorrhea within the past fifteen years. His present complaints, extending over a period of two years, were: Frequent and urgent calls to urinate, sometimes every fifteen minutes, never less than six times at night, post-mictural pain, and for the last four months painful swelling of the left testicle, its size varying, corresponding with the exacerbations and remissions in the vesical symptoms. The left epididymis, the prostate and the left seminal vesicle were enlarged, indurated and extremely sensitive to slight palpation. The fluid from both vesicles obtained by massage, in large quantities, contained pus, gonococcus and staphylococcus, numerous dead spermatozoa. Cystoscopically, chronic gonorrheal cystitis, localized in the trigone, is diagnosed. Ureteroscopically, urethritis posterior granulosa. A bacteriological examination of the urine and cultures, with its sediment, made in the Columbus Laboratory, corroborated the diagnosis, and was negative as to the possible co-existence of tuberculosis, of which one had to think, considering some of the local symptoms and the chronicity of the process. The patient improved rapidly under appropriate treatment, and was practically well, both subjectively and objectively, in May. The urine examined at that time was normal, and remained so when I saw the patient on and off in June and July. He returned in October with a slight relapse of tenesmus and cloudy urine, which, in spite of local treatment, remained unchanged until December 22d, when he complained of chills, and pain in the left lumbar region. I made a cystoscopic examination, and found pronounced trigone cystitis, the hyperemic area extending to and surrounding both ureteral openings. The right ureter seemed to discharge clear urine, but the secretion from the left one was considerably cloudy.

Passing a ureter catheter into the left

renal pelvis, a half an ounce of very cloudy urine was expelled, apparently under much pressure, and this was followed by nearly eight cubic centimeters of thick creamy pus. The catheterizing of the right renal pelvis furnished a nearly clear urine. Both were examined in the Columbus Laboratory, the report on which follows here:

Right Kidney.—Leucocytes few. Pus absent. Epithelial cells present, spindle, squamous. Stained specimens show: Cocci and bacilli moderate. These are not characteristic enough to be specified.

Left Kidney.—Blood cells few. Leucocytes present, more than one hundred to high p. field. Epithelial cells few. Stained specimens show: Many tubercle bacilli present; a few single cocci present.

Here is one of these cases in which it is impossible to trace positively the source of the infection with tuberculosis. It is impossible to state with certainty that it was present before, or when I saw the patient first, because there was no evidence found, notwithstanding my investigation in this direction. As another reason, I could also add that all the symptoms disappeared under a treatment directed only against the gonorrhea and its complications, which had hardly been the case when there was an ascending or descending tuberculosis present at the time. Neither could I positively say that in this case the gonorrhea acted as a trauma in provoking a latent tuberculosis in the upper urinary tract, because the gonorrhea was cured for quite awhile before the former made its manifestations. There is no history of tuberculosis in the patient's family. He himself is a robust man, weighing over two hundred pounds. Yet there is a remote possibility that in some way or other the kidney became infected, perhaps, long before I saw the patient, but it had not reached that stage in which local symptoms would point to the existence and the seat of the disease, or would interfere with a successful treatment of the gonorrheal process. Considering the suspicious condition of the right kidney, nephrectomy in this case is out of the question.

Permit me to add a few words regarding the treatment employed in this case. After emptying both renal pelvis and irrigating with an oxycyanide of mercury solution through the ureter catheter, I injected gomenol, and while withdrawing the catheter deposited some of it in the ureters and bladder.

Besides these applications, I injected the oil hypodermatically, after noticing a marked decrease in the number of bacilli within two weeks. Gomenol is a vegetable antiseptic; it is the result of the distillation of the leaves of the "Maleleuca Viridiflora," a tree growing abundantly in certain portions of New Caledonia.*

It is neither toxic nor caustic. The drug is eliminated principally through the air passages and kidneys, and, therefore, it is naturally employed in diseases of the lungs, and of the genito-urinary organs. It has been used to great advantage in France in the last year or so, and the results obtained are very favorable.

Under this treatment the patients' condition improved considerably. The report on the urine from each kidney, obtained January 21, and again March 15th, reads as follows:

Urine from left kidney, very few pus cells, and about a half a dozen tubercle bacilli to the slide.

Urine from right kidney, apparently normal.

It would be premature to form definite conclusions from the few cases of renal and vesical tuberculosis in which I have employed the drug. Without pretending gomenol to be a specific for tuberculosis of the urinary tract, I believe that it is a remedy capable of effecting very good results in dealing with bacterial infections therein.

4. Pyelo-Nephritis in a Prolapsed Kidney.—Mrs. O., age thirty-one years, widow, was taken sick with chills; temperature 104°; nausea and tenesmus, January 16th. I saw her in consultation with Dr. Campbell, of Chicago, the next day. She gave the following history: Father died from consumption when she was four years old; one brother died from lung trouble; mother, fifty-nine

*It is a natural terpinol, remarkably rich in antiseptic constituents and containing very few aldehydes; for this reason it is particularly well adapted for therapeutic use. (M. Bertrand's analysis.)

years old, in good health. Patient was never robust, but free from sickness until a year after her marriage, in 1893. She had then leucorrhea, pain in bladder and tenesmus, which was traceable to a gonorrheal infection of the husband. She never was pregnant. In 1899, pyosalpinx on the right side necessitated removal of the Fallopian tube and ovary. Since then the bladder symptoms were less pronounced, until the severe attack on January 16th occurred. Very little urine, I believe not more than twenty ounces, was passed in the preceding twenty-four hours. The right kidney was palpable as a dense tumor in the right mesogastrium. Cystoscopic examination demonstrated chronic cystitis of the trigone and the fundus. A catheter passed into the right ureter was arrested, seven inches from the vesical orifice, the obstruction corresponding with the location of the tumor. Pushing the catheter up a little higher, cloudy urine commenced to flow pretty rapidly, as if being under a high pressure. This urine was examined, and here is the report: Albumin, 1.7 per cent; pus, 0.2 per cent; pus coccus present; also an overgrowth of large bacilli in chains. Catheterizing of the left ureter furnished clear and normal urine.

The temperature dropped to 100° following the evacuation of the renal pelvis. The diagnosis was prolapsed kidney, kinked ureter, renal retention; pyelo-nephritis, perhaps of tuberculous character.

January 22. Making a lumbar incision, I found the lower third of the prolapsed kidney and the upper part of the ureter firmly attached to the parietal peritoneum. After severing the adhesions, and bringing the very large and congested kidney to the surface, the latter showed quite a number of protrusions, each one of them consisting of several miliary abscesses; the cut surface of the parenchyma had the same appearance. Considering the history of the case, the character of the lesions, and the good condition of the left kidney, I decided on nephrectomy.

The patient made an uneventful recovery. Temperature fell to normal the following day. The amount of urine secreted from the left kidney increased to fifty-five ounces after two days, and has remained so since. The wound closed February 5th. The remaining cystitis yielded to local treatment within six weeks after the operation.

Here is the specimen and the laboratory report on the latter:

CHICAGO, Jan. 26, 1903.

Dr. F. Kreissl, Stewart Bldg.:

DEAR DOCTOR:—**The kidney shows pyelonephritis. The organ is somewhat enlarged. Color does not show on account of formalin. There are multiple abscesses located both in the pyramids and in the cortex. Microscopically we find miliary abscesses. These do not show giant cells, proliferation of fibrous tissue, nor much necrosis. They do show cellular infiltration. Other than this there is a mild early general sclerosis. Some of the Malpighian tufts are entirely sclerosed. This is exceptional. In localities other than those of abscess, the tubular epithelium is in good shape.**

Very truly yours,

COLUMBUS MEDICAL LABORATORY.

In reviewing these cases, it is evident that no single method of examination in this particular field of surgery can always be relied upon implicitly in making a diagnosis, and deciding upon further steps. The value of cystoscopy and ureteral catheterization for both purposes should not be under-estimated. Both procedures are indispensable for the diagnosis of renal and ureteral diseases, for the exact localization of the lesions, and for information concerning the functional capacity of both kidneys. The conservative surgeon will successfully employ the ureteral catheter for topical applications in the renal pelvis in a small number of cases of so-called surgical kidney. The reports of cases of "essential hematuria" should be accepted with the proverbial grain of salt. Hematuria is a symptom of some pathological lesion in the upper urinary ways, which may not always have advanced so far as to be macroscopically visible, even after exposing the parenchyma.

Inasmuch as most of the renal disorders produce or are associated with renal congestion and intracapsular tension, and inasmuch as most of the symptoms of these disorders can be traced to the engorgement of the kidney, the conclusion is justified that timely relief of the latter by decapsulation, or by nephrotomy, should be the radical and effective procedure, if conservative means fail within a reasonable time. The results ob-

tained within the last few years are certainly encouraging enough to stimulate further work along these lines.

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TREATMENT OF THE SUPPURATIVE DISEASES OF THE ACCESSORY SINUSES OF THE NOSE.*

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SUPPURATION OF THE ANTRUM.

Treatment—In acute cases the patient should be kept quiet, the pain relieved by hot or cold compresses over the cheek and the swelling and turgescence relieved by local applications in the region of the ostium maxillare. Most satisfactory for this purpose is a spray containing gr. ii of cocain, gr. 1-10 of suprarenalin, and gr. viii of boric acid to the ounce of water. This should be used (preferably warm) every two or three hours. By reducing the swelling about the ostium the pus may escape through the natural orifice. When this is not sufficient, recent cases may occasionally be cured by washing out the antrum through the natural opening with detergent solutions or with hydrogen peroxid and weak solutions of permanganate of potash gr. ¼ ad. ℥ i normal salt solution or a saturated solution of boric acid followed by the silver salts; but usually free drainage must be established. For washing out the antrum through the natural opening a silver canula about 2 m. m. in its extreme diameter at the end and 10 c. m. long that can be attached to a small syringe will be needed. By running a soft copper wire through the canula it may be bent as desired. The natural opening may be enlarged by a trochar or burr, hypertrophied mucous membrane or granulation tissue in the hiatus semilunaris must be removed. To accomplish this it is usually necessary to resect the anterior end of the middle turbinated body which may be done with curved scissors or cutting forceps. This procedure is quite necessary if the empyema of the antrum is associated with suppuration, of the anterior ethmoid cells or frontal sinus as is often the case; otherwise the antrum would constantly be reinfected.

Hunter's method of opening the antrum through the socket of one of the molars or bicuspids is still considered one of the best, the principal objection urged against it being the annoyance caused the patient by the offensive discharge into the mouth and the possibility that particles of food may escape into the antrum.

In chronic cases Christopher Heath recommended entering the antrum above the alveolus through the canine fossa; the tendency to closure being obviated by making an opening a centimetre or more in diameter. Such an opening offers an opportunity for curetting the antrum, which is necessary in some conditions. The antrum may be opened from the naris through the inferior meatus by means of trephine, burr, drill, knife, or long curved strong trocar as recommended by Krause. The latter position obviates the objection to Hunter's method, but the opening is less easy of access, and is more difficult to maintain until healing has occurred. When this point is selected for the opening it is usually necessary to remove the anterior end of the inferior turbinated body. This method is objectionable when atrophic rhinitis exists or when there is associated suppuration of the frontal sinus or ethmoid cells. In performing this operation, Krause's trochar is an excellent instrument for breaking through the lateral wall of the antrum. The opening thus formed may be enlarged and the ragged edge of the mucous membrane cut away by cutting forceps, sharp spoon or curette. If the opening is made large enough the cavity may be easily packed through a bent tube similar to Wood's uterine gauze packer or it may be readily washed, even by the patient, through an Eustachian catheter or other bent tube. This operation obviates the objections to an opening into the mouth. In acute cases prompt relief from the pain and speedy cure may sometimes be obtained by a temporary small opening through the canine fossa: a procedure specially indicated where the teeth were all sound. The preferable instrument for this temporary opening is a diamond point drill-trephine 5 m. m. in diameter.

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driven by an electric or hand motor. The diamond point drill prevents slipping which is very apt to occur when an ordinary trephine is used. It is a waste of time, however, to attempt to treat the disease by any method while diseased roots of teeth project into the floor of the antrum. The preference in the majority of cases is for Hunter's method, the last bicuspid or the first or second molar being removed or the opening made through a space left by a tooth which has been already lost. Various forms of trephines, drills and dental burrs have been used for making the opening, but in most instances too small an instrument is employed. I use either Brainard's conical bone drill which makes an opening 6 m. m. in diameter; or better still a diamond point drill-trephine of the same size which makes a cleaner wound and which when used with a good motor shortens the operation very much. Profound anaesthesia is not usually necessary. A weak solution of cocain such as used in anaesthetizing the nares may be injected into the gum in three or four places and if this is not sufficient the patient may inhale chloroform from a wide mouthed bottle until nearly unconscious when the operation can be done painlessly. In nervous patients a general anaesthetic may be needed. Nitrous oxide gas or chloride or bromide of ethyl will answer the purpose. I have recently used the chloride of ethyl in several cases with much satisfaction and now prefer it to other local or general anaesthetics for these operations. Hemorrhage may be checked by tamponing. The opening having been made, the antrum should be washed out and a gold or rubber tube introduced to maintain its patency. If this precaution is neglected, the opening is likely to close before the disease has been cured. Any good dentist can make a suitable gold tube which can be fastened with clamps to the adjoining teeth. I use by preference rubber tubes nearly six millimetres diameter, nineteen to thirty-five millimetres in length, and with a calibre of four millimetres with flanges at each end. With a wire, the end of which has been bent to a right angle, the distance through the alveolus may be measured and a tube of proper length selected. The flange at the upper end of the tube is thinned by cutting away its upper surface, until it may be squeezed into a gelatin capsule of proper size. This is then oiled and readily passed through the opening into the antrum. A probe is then passed through the tube, and the gelatin capsule perforated or forced off when the flange opens out, and the tube is secured. These tubes are inexpensive and are very much more comfortable to the patient than gold. Instead of using a tube some surgeons prefer closing the opening with a solid plug which is fastened to the teeth or to a plate, an apparatus that can be best supplied by a dentist. The subsequent treatment consists of keeping the cavity clean by washing it out with watery solutions of hydrogen peroxide 50% strong or boric acid a saturated solution or simply with sterilized water; and stimulating healing by injections once a day of a 5% solution of protargol of a 20% solution of argyrol; or by a one to 5% solution of zinc sulphate or chloride or one to 2% solution of copper sulphate. Powdered boric acid, iodol, iodoform or aristol may be used advantageously by insufflation and sometimes the patient will obtain much relief by spraying the cavity with mild solutions of carbolic acid, oil of cloves, oil of cinnamon, or terebene in oleum petrolata alba, but oily solutions can not be used when a rubber drainage tube is employed as they quickly soften the tube and cause it to swell. The patient should stop the opening in the tube with a pledget of cotton while eating. This treatment may be given a thorough trial but if it does not succeed within three or four months, the advantages of a radical operation through the canine fossa should be urged upon the patient, for it is probable that delayed healing is due to alterations in the lining membrane or to polypoid tissue, or dead bone, or to septa which prevent complete drainage; any of which conditions demand curettement of the cavity. In this condition, Christopher Heath's operation or some similar procedure becomes necessary and a radical operation should be performed.

The radical operation consists of opening through the canine fossa and curetting thor-

oughly the lining of the antrum, removing at the same time any dead bone or obstructing septa. The operation is performed with various modifications in the incision and technique by different surgeons. This operation should be done under general anaesthesia and it will be found most convenient if the chloroform is administered by Brophy's inhaler or some similar apparatus which allows it to enter the mouth through a tube so that the surgeon's view will not be interferred with. The mouth should be kept open by a gag inserted between the teeth of the opposite side. Numerous sponges for swabbing out the throat should be on hand and several long strips of narrow gauze for packing. The hanging head position will be found favorable in order to prevent blood running into the throat. A thick pad of gauze or sponge introduced between the cheek and the posterior teeth will also help greatly in this respect.

Caldwell-Luc to render the stitching easier make the incision about 5 m.m. below the buccal fold between the alveolus and the cheek and extend it from the first molar tooth forward to the canine ridge; they then raise the periostium and soft parts together, and make an opening through the anterior wall of the antrum large enough to admit the finger and extending to the nasal wall. After curetting the cavity and swabbing it out with a 1 to 10 or 1 to 5 chloride of zinc solution they pack it temporarily with iodoform gauze to arrest bleeding. The nasal cavity of the same side is then filled with gauze in order to avoid injuring the septum. The packing is then removed from the antrum and a large opening is made through the nasal wall into the inferior meatus either with chisels or with electric burr. The anterior end of the inferior turbinated bone is cut off at the same time. The antrum is again packed from the mouth and the end of the dressing brought into the nose; the incision in the mouth is then closed by catgut sutures. The wound generally closes by the 4th day; the packing is removed from the antrum through the nose on the 4th or 5th day and if pus is still secreted the cavity is washed out frequently through a curved canula for 5 or 6 weeks. The advantages claimed for this operation are that it allows immediate closure of the wound in the mouth and prevents reinfection of the cavity from that source; at the same time it is found rather pleasanter for many patients.

Nicholas Senn adopts a similar operation but makes an osteoplastic flap by a U-shaped incision made with a knife through the soft parts and with a chisel through the bone, the anterior part of which falls just behind the root of the canine tooth. The horizontal part is just above the alveolus on a level with the floor of the antrum and the posterior vertical part is about 18 m. m. back of the first. This flap is fractured by inserting an elevator into the antrum through the transverse cut and using it as a lever. The flap composed of mucous membrane, periostium and bone is turned up and through the opening the cavity is carefully cleared of foreign bodies, sequestra, fungous granulations or polypi by a sharp spoon. With curved forceps an opening is made from the antrum through the nasal wall into the inferior meatus and a drainage tube is passed from the mouth through the antrum into the naris, the two ends being fastened together with a strong silk thread. A small semicircular defect is made in the margin of the bony flap to furnish space for the drainage tube. The flap is then replaced and sutured with catgut sutures through the mucous membrane and periostium only. The cavity is washed daily with a boric acid or other antiseptic solution and when suppuration ceases the thread is cut and the rubber tube drawn from the nostril back into the antrum. The nasal drainage is continued for some time longer until a permanent opening is established, and then the tube is dispensed with. The irrigation is continued for several weeks.

A. Logan Turner makes an incision down to the bone and carries it back to the molar process of the superior maxilla. The soft parts including the periostium are then raised and the bone forming the anterior wall of the antrum or the canine fossa is cut away by chisel and mallet, or a trephine or perfor-

ator; the opening being enlarged to satisfactory dimensions by means of a bone punch forceps or burrs. In doing the operation care should be taken not to injure the infraorbital nerve or artery. The opening is generally made large enough to admit the little finger. Hemorrhage is controlled by packing with gauze and after careful inspection under good light, the walls of the sinus are curetted until all diseased tissue has been removed. It is especially important in curetting the roof of the cavity not to injure the infraorbital nerve, and also that all angles and recesses be cleared of all diseased tissue. Finally the antrum is dried by gauze, is swabbed with pure carbolic acid and lightly packed with iodoform gauze, the end of the dressing being allowed to project through the opening in the mucous membrane into the mouth. A pad of gauze saturated with boric acid solution is placed between the upper lip and alveolus to cover the wound and should be changed three or four times daily to prevent reinfection; the wound each time being syringed with a solution of boric acid and the mouth carefully washed out. The patient is given a liquid diet only at this time. The packing is not taken out until the 5th or 6th day unless the temperature or the appearance of the wound should indicate its earlier removal. At this time the cavity is repacked and subsequently redressed every 3d or 4th day the packing being finally removed by the end of the 2d or 3d week when granulations line the cavity. The wound through the mucous membrane may be partially closed by one or more stitches either immediately after the operation or after the second dressing. Turner does not make a counter opening into the nose, and if drainage had previously been provided through the alveolus, he either allows the opening to close before the radical operation, or keeps it plugged for several days afterward. Whatever operation is adopted in very chronic cases, the healing process may require months or even years.

SUPPURATION OF THE ETHMOIDAL CELLS.

Treatment—Some cases recover spontaneously, but most of them continue for many months, and even years unless thoroughly treated. In acute cases, relief may frequently be obtained by local medication that will reduce the swelling and thus allow the pent up secretions to escape. For this purpose nothing is better than a spray containing cocaine hydrochlorate gr. ii, suprarenalin gr. 1-10, boric acid gr. viii to the ounce of water. It should be thoroughly applied several times daily. In chronic cases the indications are to remove all obstructions and provide for free drainage and to keep the parts cleansed and as nearly aseptic as possible. In order to obtain free access to the ethmoidal cells it is necessary to remove a part or all of the middle turbinated body; this may be easily done with curved scissors designed for the purpose, (Ingals' ethmoid scissors), or with these and the ordinary nasal snare. If disease of the antrum co-exists, it also must be remedied before we can hope to effect a cure. Polypoid growths or fungous granulation may be best removed by snare and sharp spoon, or small masses may be touched with the galvanocautery or with monochloracetic acid. Dead bone must be searched out with a probe and carefully scraped away, and with the sharp spoon or cutting forceps the partitions of the ethmoid cells must be broken down to give free exit to the pus; but care must be taken not to excite undue inflammation, which might extend to the brain. These operations may all be done under cocaine but it is generally necessary to have repeated sittings. It is so difficult to see the parts well when the patient is under a general anaesthetic that the advantages are greatly in favor of local anaesthesia supplemented in some instances by chloride of ethyl during the more painful parts of the operation. Free applications of suprarenalin will greatly facilitate the work. In some quite extensive operations, a thorough application of a strong solution of suprarenalin may so prevent bleeding as to allow the operator to see what is being done, but this is only when it can be injected into each of the cells to be attacked. After the operation the naris may be temporarily packed with gauze or lint to prevent bleeding. The

cure will be hastened by injecting into the ethmoid cells, with a long, slender silver canula attached to a hyypodermic syringe, a 50% solution of hydrogen peroxid followed by a saturated solution of boric acid for cleansing, and subsequently by a 4% solution of protargol or a 15% solution of argyrol. This should be repeated every second or third day. The patient should cleanse the nasal cavity once or twice daily with a detergent solution, and may use two or three times daily an oily spray of Thymol gr. ss, Ol. Caryophyli v, Ol. Petrol. Alb. ad ℥ i, the strength being slightly increased or diminished according to its effects. It should not cause smarting for more than five minutes. Where the disease is extensive, it may be necessary to remove the whole labyrinth and a more thorough operation may be made under a general anaesthetic. Under these circumstances the operation is usually done by the sense of touch, the finger being introduced frequently to locate the diseased tissues and to determine when all dead bone has been scraped away. Great care must be exercised not to break through the cribriform plate. After extensive operations in this region the wound should be swabbed with 95% carbolic acid and the naris packed with surgeons lint or gauze saturated with iodoform and boric acid to prevent bleeding. The packing must not be put in too tightly and it should be changed as often as every two or three days, for about two weeks, or oftener if there is doubt about thorough removal of the pus cavities; the naris being thoroughly washed out at each dressing. When this disease is associated with orbital abscess or fistula an external operation may be needed in addition to the intra nasal treatment. The curved incision for this operation is started at the inner third of the eyebrow and prolonged downward toward the inner canthus. The periosteum and soft parts are raised together and the inner wall of the orbit exposed. If an opening through the bone is found it is enlarged, the ethmoid cells cleaned out and free communication established between the orbit and naris. The cavity may then be treated with carbolic acid and plugged with gauze and then the external wound is nearly closed and covered with antiseptic dressing.

SUPPURATION OF THE SPHENOIDAL SINUS.

Treatment—Kiaer and Lapalle in 364 autopsies on bodies dead from various diseases, found over 13% affected by suppuration of this sinus, which would indicate that the affection is very generally overlooked. Once the diagnosis has been established the treatment is of the same character as that recommended for other suppurating cavities; that is, the establishment of free drainage and cleanliness with antiseptic and stimulant washes, according to the amount of suppuration and the delay in healing. The normal opening of this sinus is so high up that it is impossible to employ treatment effectively through it; therefore an artificial opening must be made which should be large enough to give free drainage and in some instances to allow of curetting the cavity. In the majority of cases it is not practicable to inspect the normal opening of this cavity until the posterior end of the middle turbinated body has been removed, a procedure which must precede any satisfactory treatment of the cavity. The posterior half of the middle turbinated may be readily removed by curved scissors designed for the purpose and aided if necessary by the nasal snare. This being done and the swelling of the parts having been reduced by cocaine, inspection of the anterior wall of this sinus may readily be made provided the nasal cavity is of normal size. If there is any doubt, it is well to inject into the cavity through the normal opening, by means of a long silver canula attached to a hypodermic syringe, a small quantity of peroxide of hydrogen diluted with an equal part of water. By the foam that will speedily escape if there is pus in the cavity, the diagnosis will be established. The anterior wall of the sinus may be opened by means of Hajek's hook, and forceps, by a trochar, a sharp spoon and punch forceps or by a trephine. The trephine makes the smoothest opening and is therefore to be preferred. A diamond point drill-trephine 6 millimeters in diameter which will not slip, is perferable. With this

instrument one or more clean cut openings may be made. The cavity should be packed with absorbent gauze for 24 hours after the opening has been made by any of these methods. This may be done easily through a gauze packer. If it is considered necessary to curette the cavity, the whole front wall of the sinus should be removed; punch forceps may be used to enlarge the opening when necessary. The sinus has also been opened through its lower wall by means of a trephine, and also by proceeding through the antrum when the latter is diseased; but neither of these operations offers any advantage over those already described. Curetting should be done very gently at the upper part of the sinus, because of the danger of breaking through into the cranial cavity. Turner recommends swabbing out the cavity with pure carbolic acid. The after treatment of these cases is of the same character as that recommended for suppuration of the ethmoid cells. A cure may be expected in from two to four months.

SUPPURATION OF THE FRONTAL SINUS.

Treatment—Because of the dependent position of the ostium frontale and the direction of the canalis naso-frontalis, not a few patients affected with acute suppuration of this sinus will recover spontaneously. In others the cure is much facilitated by local remedies which reduce the swelling, such as suprarenalin and cocaine which may be used several times daily in the same manner as recommended for suppuration of the ethmoid cells or for closure by swelling of the ostium maxillare, but in a considerable number of these cases the obstruction is due to nasal mucous polypi or to chronic thickening of the middle turbinated body so that it will not be relieved in this manner. In such cases the polypi should be removed or the anterior end of the middle turbinated cut off, or both. This will give free exit for pus provided the canal is large enough and it will allow the local remedies to reach the swollen tissues about the hiatus semilunaris and thus give relief. With still other cases a cure may be effected, after removing the obstruction, by washing out the frontal sinus and the application of antiseptic solutions. For this purpose equal parts of the commercial solution of peroxide of hydrogen and water may be thrown in through a canula until cessation of the formation of froth shows that the pus has been practically removed. The cavity should then be washed out with a warm solution of boric acid and this should be followed by a 4% solution of protargol or a 15% solution of argyrol.

In many cases, however, the disease does not come under the care of the physician until it has become chronic and then little can be hoped for from the simpler measures, though probably a few of these old cases would be relieved by simply removing the obstruction, and in others the disease could be cured by washing with detergents and antiseptics as just recommended. In other chronic cases the disease may be cured by enlarging the canal so as to give free drainage and then either packing the cavity or washing out with the remedies already suggested; but if polypoid changes of the mucous lining have taken place or if there are septa in the frontal sinus which prevent drainage of some parts of the cavity, or if there has been necrosis of bone, more radical measures may be needed; however, the result will sometimes depend upon whether the suppurative process has been the cause or the effect of an oedematous or polypoid condition of the lining membrane. There are some who hold that this condition of the mucous membrane is nearly always the cause of the suppuration, but the frequency with which mucous polypi are observed in the nares without suppuration shows that the theory may at least be open to many exceptions. It may be, therefore, that a considerable number of the chronic cases of suppuration of this cavity might be cured through the nares without external operation, provided the opening was made fairly free.

It was formerly taught that in diseased conditions it was generally easy to open into the frontal sinus from the nasal cavity by means of a trochar or other sharp instrument, but the danger of perforating the cribriform plate should deter surgeons from attempting this method unless in very exceptional cases. Where the canal can be easily entered, Palmer's frontal sinus drill or Tilley's curved

burrs may be used for enlarging the drainage canal. For this purpose I have recently devised a frontal sinus burr Fig. 1, which is passed in over a pilot and run by a dental engine. I had this made for operating upon a patient who has for years declined to have an

Ingals' Pilot Burr: A, Pilot; B, Burr; C, Shield.
The Pilot (A) is a flexible steel wire that may be used straight or bent in any direction and long enough so that it will project ⅛th of an inch beyond the end of the burr when the burr has been slid over it. I have also a longer pilot that will project ½ an inch beyond the burr so as to prevent any possibility of its working down from the frontal sinus when the canal is being enlarged.
The hollow Burr (B) is fastened to a hollow wire cable about 2¼ inches long and this to a steel tube about 3 inches long to the end of which is connected the shank for attachment to the chuck of a dental engine. The Shield (C) is flexible for 1½ inches at its distal extremity. In using the instrument the distal end of the pilot is held in position by the canal to be enlarged so that it can not revolve. The proximal end is held in position by the steel tube at the proximal portion of the burr. A removable handle may be fastened to the pilot to facilitate its introduction.

external opening.* I used the instrument on the cadaver and found that it apparently worked perfectly, and I have recently operated on the patient and found it in every way satisfactory. After anaesthetizing the parts thoroughly and giving the patient chloride of ethyl to unconsciousness, I passed in the burr enlarging the canal to the frontal sinus to 6 m. m. and with a small sharp ring knife with a flexible steel stem curetted the mucous membrane about the ostium frontale. The operation was preceded by thorough cleansing of the cavity and cocainization by means of a 10% solution in a 1 to 4000 solution of suprarenalin thrown in slowly by a small syringe through a long silver canula and allowed to run down beside it. The pilot was then introduced well up into the frontal sinus, the hollow burr was slid on over the pilot and over it the flexible canula to prevent injury of the naris. The burr was slid up on the pilot until it reached the lower end of the infundibulum, and then it was fixed in the chuck to the dental engine and held in place by an assistant. The patient was quickly anaesthetized by chloride of ethyl; then I took charge of the burr, turned on the electricity with my foot and maintained constant gentle pressure until the burr passed into the frontal sinus which it did in from 4 to 6 seconds. The burr was then withdrawn and the frontal sinus and the enlarged canal packed with absorbent gauze soaked in a 95% solution of carbolic acid by which it was thoroughly cauterized. The gauze packer (similar to Wood's uterine gauze packer) was given the same curve as the pilot that had been passed into the sinus. This packing was allowed to remain a few minutes, and next the sinus, the canal and the naris was thoroughly packed with iodoform gauze which was allowed to remain for 4 or 5 days. Orthoform may be thrown into the sinus if necessary to prevent pain. Any of these operations should be preceded by thorough removal of any obstruction in the naris.

Radical Operation—If the canal is completely closed and in any case where the disease does not yield within 4 or 5 months to the treatment already proposed, it is probable that partial septa cause pus pockets in the frontal sinus or that the walls of the cavity are much diseased. In these conditions a radical operation by an external opening

*When this paper was read I had not operated on this patient but I have since done so and the operation was a perfect success.

through the anterior wall of the sinus is necessary. Any operation of this kind should also be preceded by thorough clearing out of obstructions in the naris and time should be allowed for all swelling that follows the operation to subside before the main operation is attempted.

In general this operation consists of lifting the soft tissues, chiseling away a portion or all of the anterior wall of the sinus, scraping out any diseased tissue and making a large opening for drainage into the naris. Various modifications in the incisions and technique are adopted by different surgeons. Formerly a drainage tube was inserted after the operation to keep the drainage canal open, but latterly most surgeons prefer to make so large an opening that a tube is not needed. A general anaesthetic has to be administered for this operation and a Brophy inhaler or some similar instrument that enables the anaesthetist to administer the chloroform through a tube in the mouth, so that the operator's view will not be interferred with, will be found a great convenience. For the operation the surgeon will need several sponges for the throat as well as those for the field of operation, a number of haemostats, a gag to keep the teeth apart, a strong sharp knife, a couple of small chisels, a mallet or trephine and punch bone forceps if the surgeon prefers them to chisels, a small retractor, a Kocher's director or periosteotome, two or three sharp spoons, a Krause's trochar or Tilley's burrs or my own pilot burr for enlarging the canal, with needles and sutures, several strips of gauze and proper dressings. Both eyebrows should be shaved and carefully disinfected and the head should be covered with a sterilized towel. It is well to use boracic acid solution during the operation to prevent any injury to the eyes. Herbert Tilley recommends plugging the posterior nares to prevent the passing of blood into the throat, but this annoyance may also be avoided by the hanging head position or by placing the patient on the face when the opening is made through into the nasal cavity. The incision should extend from the junction of the middle and inner third of the supra-orbital margin in a curved line forward and downward to the root of the nose about 6 m. m. above the level of the internal canthus. If later this incision is found too small it may be extended farther outward or an upward incision may be made in the position of one of the natural wrinkles in order to avoid a visible scar. When practicable the supraorbital nerve and artery should not be injured. All the structures including the periosteum are divided down to the bone and these should be raised by a periosteotome and held upward by retractor. An opening should then be made above the orbital margin with the chisel and mallet or such other instruments as the surgeon may prefer, sufficiently large to allow of free inspection and curetting of the cavity. The orbital margin itself should be preserved to prevent falling in and an ugly scar. When the bone has been removed, a dark blue lining membrane will be exposed quite different from the white duramater. This should be perforated, the cavity sponged out with gauze and any polypi diseased mucous membrane or necrosed bone carefully removed with a sharp spoon, special care being taken that all recesses and subdivisions of the cavity are carefully treated. An extension of the sinus along the roof of the orbit is frequently present and when so, it must be carefully attended to. The cavity should then be packed with gauze until bleeding ceases, provisions should be made to prevent blood from running into the larynx and then the ostium frontale and canalis naso-frontalis should be enlarged by a Krause trochar which will be guided by the little finger introduced into the nostril or they may be enlarged by means of Tilley's series of burrs or my own pilot burr. In the latter case it would be well to have the pilot sufficiently long so that the end might be passed on out of the nostril where it could be held firmly by an assistant. After the canal has been enlarged any diseased ethmoid cells that appear should be carefully curetted, the wound then dried with gauze and afterwards swabbed thoroughly with a 95% carbolic acid, or a 10% solution of chloride of zinc. Turner recommends that this drainage canal should be large enough to pass the little finger. The frontal sinus is

then lightly packed with iodoform or other antiseptic gauze. Turner brings the end of this gauze out at the inner end of the wound. Walker Downie after bringing the end through the opening in the bone passes it through a small buttonhole incision made in the skin close to the reflection of the upper eyelid and concealed beneath the margin of the orbit. The original incision is then entirely closed. Luc passes the lower end of the gauze strip into the nasal cavity and after packing the sinus completely closes the incision in the skin. He removes the packing through the nose two or three days later. This appears to me the preferable method. The cavity having been packed the external wound is closed partially or completely according to the disposition made of the end of the strip of gauze and the whole is covered with an antiseptic dressing which may remain for one or two days. The wound should be inspected at that time to be sure that all is going well. If there is no fever and the dressing appears sweet the packing may be left in the sinus for 6 or 7 days. The stitches in the skin should be removed as early as possible to prevent scarring.

The foregoing is essentially the operation as recommended by A. Logan Turner who especially urges that the dry treatment be used instead of irrigation. Kuhnt removes completely the anterior wall of the sinus in order to allow it to collapse and obtain union of the two surfaces. This necessarily causes a bad scar. Jensen and Killian remove the inferior wall of the frontal sinus below the supra orbital margin thus obtaining free access to the ethmoid cells and allowing for a certain amount of collapse of the soft tissues without marked scaring. Various osteoplastic operations have also been recommended to avoid this latter defect. Tilley has employed Thiersch's method of skin grafting for forming a new lining membrane of the cavity after it had been thoroughly curetted.

Killian makes his first incision in the eyebrow curving down to the lateral border of the nasal bone about on a level with the internal canthus of the eye. This incision goes down to the periostium only. The incision through the periostium is made about 6 m. m. above the border of the orbit. The soft tissues and perisotium are lifted upward and the frontal sinus then opened with a chisel. The soft parts are then drawn downward and outward toward the eye and the periostium is removed from the nasal process of the superior maxilla and the lachrymal bone; the floor of the sinus, constituting the upper part of the orbit, is cut through from above and enlarged from below, if necessary; and with a chisel the nasal process of the superior maxilla and the lacrymal bone are cut away the mucous lining being left intact, and with sharp spoon and forceps any diseased ethmoid cells are removed extending even back to the sphenoidal sinus, if desired. The edge of the orbit is left intact to prevent scarring. Having made a very free opening from the frontal sinus, and loosened from its mucous covering and removed part of the middle turbinated body, he cuts the mucous membrane that lined the internal surface of the nasal process of the superior maxilla and the lacrymal bone from above downward along the outer border of the nasal bone, and backward about 5 m. m. below and parallel to the cribriform plate. Then it is cut across at the lower portion of the opening through the bone, thus forming a mucous flap which is used in lining the drainage canal from the frontal sinus to the nose. The cavity is packed with gauze and the external wound accurately closed.

When both sinuses are to be operated upon at once, some do it through a mesian vertical incision breaking down the septum, if one exists, and draining through a single or double canal according to the condition of the ethmoid cells. Others join the two eyebrow incisions, and still others prefer to operate upon each cavity separately, which as Turner states, confines the scars to the region of the eyebrows and allows each cavity to be treated independently which is especially important if one should be slow in healing. A complete renewal of the lining membrane of the frontal sinus and the formation of new membrane in the drainage canal is a tedious process which may require many months, but the active treatment may generally be closed within a few weeks. Recurrence of the sup-

puration sometimes takes place and may necessitate a second or third operation. Several deaths have been recorded as a result of these radical operations due to osteomylitis and meningitis or septicaemia.

WHEN AND WHEN NOT TO OPERATE ON THE MASTOID BONE.*

BY H. GRADLE, M. D., CHICAGO.

The operative exposure of the cells within the mastoid process is at present fully recognized as a life-saving operation. The literature of the last decade yields annually reports of some hundreds of cases of intracranial complications and of pyaemia of otitic origin. Of these cases—inevitably doomed without operation—a variable, but large proportion is saved surgically. A review of these reports teaches:

First, that suppuration of the middle ear —both acute or chronic—involves danger to life.

Secondly, that even in the desperate cases thus reported great success attends mastoid operations, although many of them must extend into the cranial cavity, and

Thirdly, that properly timed surgical intervention would have prevented this serious extension of the disease.

But on the other hand, we know, too, that acute mastoiditis gets well in most instances and kills in very few without operation. While chronic mastoid disease ends perhaps but rarely in recovery without operation, it can and does remain stationary and unprogressive in the preponderance of patients.

The indications for mastoid operations are hence not easily drawn, and errors in both directions are not uncommon. Statistics do not help us much in settling these problems. A larger personal experience is of greater value for this purpose.

There are no reliable statistics regarding the fatality of suppuration of the middle ear and of the antrum not treated by operation. The figures of clinics are not decisive, because they contain a selection of the graver cases. Moreover, all patients with urgent symptoms are now-a-days operated upon, at least in clinics. As near as I can estimate from personal experience and available reports published, the fatality of all otitic suppuration, acute and chronic, is in the neighborhood of one-half per cent. The danger is greatest during the exacerbations of chronic suppurations of the middle ear. The mortality of simple opening of the mastoid process fluctuates in recent reports between 4% and nearly zero. The radical mastoid operation is generally attended by about 8% fatality. In the statistics of the Illinois Eye and Ear Infirmary for five years, of the work done by all attending surgeons, kindly furnished me by Dr. Pierce, 26 simple operations (opening of the mastoid) resulted in two deaths, while in 126 radical operations there were 12 fatalities. Universal experience, however, teaches that most of the deaths are due to the disease, and not to the operation. But no one can claim that an operation of this magnitude does not by itself involve some risk to life.

The indications for opening the mastoid for acute disease can be best defined on the basis of a brief review of the various modes of termination of acute mastoiditis. The mucous membrane lining the mastoid antrum and any cells continuous with it participates in all severe inflammations of the middle ear as has been shown by autopsies. This superficial inflammation of the lining membrane of the mastoid spaces does not, however, constitute clinical mastoiditis. It is clinically a latent process. We speak of mastoiditis only when the inflammation extends into the bony wall of the air cells. The involvement of the bone reveals itself by persistent pain and localized tenderness, as well as by an irregular usually but moderate rise of temperature. This febrile rise is not characteristic in children, and in the course of an acute otitis it is masked by the fever incident to the latter. A protracted slight fever not falling off with free drainage from the affected middle ear is, however, suspicious of mastoiditis.

In at least one-third of all instances acute mastoiditis subsides gradually after a climax

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of three or four days, provided there is free drainage from the middle ear. Such recovery is least likely in streptococcus infection, but very probable when due to the pneumococcus. In a small number of instances the acute symptoms subside slowly, but a chronic suppuration of the mastoid antrum persists and shows itself by incurable discharge through the middle ear. In a large minority of cases of mastoiditis, especially those due to the streptococcus, the inflammation leads to caries or necrosis in the mastoid process. These destructive processes end in perforation, most commonly on the external surface of the mastoid, less often on the anterior surface into the meatus, and least of all beneath the tip under the muscles of the neck. During the course of any mastoiditis, but especially those forms attended with bone destruction, there exists the danger of an extension of the pyogenic process into the cranial cavity, or, at least, into the lateral sinus, causing ultimately pyaemia. General surgical experience teaches that these dangers are to be feared the most when the pus is under tension, or when bony destruction is going on.

From these data the operative indications can be inferred:

1st. The least suspicion of intra-cranial extension based on persistent one-sided headache or on any cerebral symptoms gives an immediate vital indication.

2nd. Whenever a perforation threatens this should be anticipated by operation, and if it had opened spontaneously through a narrow fistula the danger of pus under tension should be obviated by better drainage. Perforation is inevitable whenever the posterior wall of the meatus of the ear begins to sag, whenever the soft tissues behind the ear show inflammatory infiltration (not merely a pale oedema) or when infiltration begins around and beneath the tip of the mastoid.

3rd. When the characteristic signs of mastoiditis, viz., pain and tenderness, continue to increase after the third day, or even increase rapidly after the second day, immediate operation is the safest course.

4th. When the discharge of acute otitis with mastoid symptoms does not diminish at all in the course of about two weeks of appropriate treatment, chronicity must be expected, even though the mastoid signs diminish. Hence, an operation is now proper.

5th. If the mastoid pain and tenderness begin to diminish after two or three days of climax, the operation may be deferred. Those cases in which the mastoid symptoms remain stationary after the first two or three days belong to the debatable class in which it is difficult to say whether to operate or to wait. If mastoiditis follows otitis, the discharge of which has ceased, the need of operation is greater than when there is still discharge from the middle ear. Streptococcus infection means greater danger and more need of operation than the presence of the pneumococcus or staphylococcus in the pus of the middle ear. As a rule, however, we must individualize in these cases and remain prepared for operation until recovery has begun. In cases of doubt an unnecessary operation may be safer than any unreasonable delay. In all acute cases the only operation to be considered is the opening of the mastoid. The radical operation is entirely uncalled for and improper.

The sub-periosteal accumulation of pus over and above the mastoid region raises the question very often whether to open into the bone or to content oneself with an incision through the skin. Such a sub-periosteal abscess is in some instances brought about by the perforation of an abscess from the interior of the bone. In other cases, however, it may be purely an external lesion without any bone involvement at all. In the latter case a simple incision is followed by an uneventful cure in the course of one to two weeks, while in the former affection healing is very much protracted or does not take place at all if there be a sequestrum of bone. It is sometimes difficult to distinguish between these two conditions. The genuine sub-periosteal abscess occurs only in children, never in adolescents. Its pain and discomfort is associated from the start with

the external swelling, while, if the swelling is preceded by the history of mastoiditis, the pus accumulation means the breaking of a mastoid abscess. When the opening of a supposed subperiosteal abscess is not followed promptly by the subsidence of all symptoms and a rapid lessening of its discharge, the safer plan is to search for a fistula in the bone and to enlarge it.

In chronic disease of the middle ear and mastoid, the operative indications are to be regarded from a different point of view from those in acute cases. A simple opening of the mastoid antrum, although often curative, is generally not the proper operation. It should be the choice in those rare instances in which a profuse incurable discharge is found with well preserved hearing power, especially so when the other ear has poor hearing. For a simple opening of the mastoid does not endanger the hearing. But in most cases a cure is obtained quicker and with greater certainty by the radical operation which converts the antrum, the attic and the middle ear proper, into one continuous and accessible space with exenteration of contents. This is a more difficult operation than the simple opening of the antrum. While perhaps but little more dangerous to life than the latter, the risks of wounding the facial nerve and the horizontal semicircular canal and of injuring the hearing are greater. Moreover, if not thoroughly done, it does not cure. The difficulty of decision is increased by the impossibility to recognize whether in a given case of chronic otorrhoea the mastoid antrum is involved except when urgent danger signs—external tenderness and pain—are present.

Perhaps the most convenient way of defining the operative indications in chronic disease of the middle ear is to eliminate those cases which do not require operation. It is not proper to resort to operation in the absence of any urgent symptoms until a thorough trial has been given to non-operative treatment. This test of conservative methods should include all procedures by which a cure can be effected. In the uncomplicated instances syringing followed by insufflation of boric acid powder may suffice. Inspissated pus or secretion pent up in pockets in the attic or in a fistula in the bone may be dislodged by a stream directed into the recess through a fine canula. The pent up pus may become more accessible after the macerating influence of a prolonged earbath with dilute lysol solution. Polypi should be removed and granulation tissue may be cauterized with nitrate of silver solution. In all these instances the efficacy of the treatment is shown after a few days' trial by the disappearance of the odor of the discharge or conversely its futility is indicated by the unchanged stench. In the latter case—or in any case combined with the other methods—capillary drainage should be tried as advocated by Pierce. After thorough cleansing of the meatus the channel is well packed up to the middle ear with a good absorbing gauze, which must be changed at first once daily. Capillary drainage acts in a manner quite different from the other procedures. The foul odor is not promptly removed as after successful irrigation. But the discharge lessens steadily until after the lapse of 3 to 6 weeks the ear has become dry and by this time—odorless. Unfortunately, the cases which yield to no other conservative method except capillary drainage are the ones most likely to relapse.

Only after chronic otitic suppuration without urgent symptoms has resisted all conservative methods or has relapsed repeatedly in spite of apparent cure should the radical operation be considered. If, after such treatment has been properly tested for a sufficient length of time, there remains a discharge free from odor, the danger to the patient is not greater and probably less from the disease than from the radical operation. If, however, the discharge remains fetid in odor, experience shows that the danger from the disease is as great, if not greater, than from the operation, while the latter offers at least complete exemption from future danger if not the certainty of a cure. Hence, under these conditions and in the absence of threatening symptoms the question whether to operate or not must be decided by the patient himself, or at least by his circumstances.

If, however, the fetor of the discharge

resists conservative treatment in a case in which epidermis concretions (cholesteatoma) are recognizable by the persistence of scales of skin in the discharge the danger of the operation is far outweighed by the danger of the morbid condition. Caries of bone likewise may enforce the indications for operation, but not in every instance. A carious spot in the wall of the middle ear can heal completely provided the treatment succeeds in draining the pus so as to render it odorless. But if caries can be detected in an instance in which the fetor of the discharge resists conservative treatment the possibility of pyogenic extension is sufficient to warrant prompt action. Finally, it must be emphasized that a prompt radical operation is the only safe course in all instances in which irritative symptoms indicate active extension of the disease. This immediate indication is given in all chronic instances of otitic suppuration by persistent dizziness, pain or local tenderness, onesided headache or any symptoms suspicious of intra-cranial involvement.

Discussion.

Dr. J. Holinger: Mr. President.—The indications for operating on the mastoid process in cases of acute inflammation are very pronounced, as are also those in cases of acute inflammation of the mastoid during a chronic suppuration of the middle ear. We may be in doubt, however, in cases of chronic suppurations of the middle ear without acute inflammation of the mastoid process. These cases are very numerous, and require our special attention, as these cases offer usually extraordinary technical difficulties. Here we have to individualize in each case, and the social position and intelligence of the patient are important factors. Patients of the working class, who do not take proper care of themselves, and are indifferent to dangerous symptoms, require operation for chronic suppuration of the middle ear much oftener and much earlier than do intelligent patients of the better classes, having generally also a better education.

Dr. P. J. H. Farrell: Referring to the chronic cases of suppuration of the middle ear. I have found that the clinic cases that come into my service are better if operated without delay. Take the ordinary cases that go from one clinic to another (and we have a great many of them at the Cook County Hospital. I have operated five mastoid cases this week,) I find it useless to attempt systematic treatment, as they will only stay for a few weeks and no permanent good can be accomplished. In that class of patients, with an old chronic suppuration of the middle ear, I would advise operation, and I find results are much more satisfactory both to the patient and myself. Take the routine cases we get in private practice under ordinary circumstances, in those we will, of course try the usual methods of treatment before advising operation. The percentage of cures without operation in cases that give a history of suppuration for several years is very small, even after months of careful treatment, while all cases are cured by operation and can usually be discharged from the hospital in three weeks or less, perfectly well, with the hearing usually much improved. The long suffering patient is relieved from the depressing effect of the annoying and frequently foul smelling discharge as well as the danger of severe cerebral involvement that so often ensues in these cases.

Dr. Frank Allport: I am sure we have all listened with much pleasure and instruction to the very able paper of my distinguished colleague, who has clearly defined the lines of operative and non-operative indications of mastoid diseases, and while he has thoroughly covered the ground indicated by the title of his paper, and leaves little or nothing to be said, yet I feel it would be an error to leave a paper of this importance without quite a free discussion, for as we well know, honest men may entertain divergent views upon similar topics, and while I entirely agree with Dr. Gradle in the general trend of his article, my own experience would lead me to entertain somewhat different opinions concerning one or two of his expressed convictions. For instance: Dr. Gradle believes (unless I misunderstood him) that in acute or sub-acute mastoiditis, fever, pain, tenderness, etc., are invariably present. Undoubtedly this statement is almost universally true after sufficient pus, granulations, etc., are accummulated within the mastoid process, to evoke such external evidences of internal disease, and yet I meet from time to time with most obscure instances of acute and sub-acute mastoid disease, where the external, objective signs of disease are so slight as to render exceedingly questionable any advice tending toward operative procedures. Some of the most complete examples of bone destruction that I have ever seen have been in patients with scarcely a mastoid symptom, and where I have been almost ashamed to operate. A few years ago a patient was sent me from DeKalb, Ill., on account of a persistent pain at the tip of the mastoid process. There were no other symptoms and no apparent history of a middle ear abscess, and the drum head and tympanum appeared normal. I could not believe a mastoid disease existed and suggested to her family physician a rheumatic or neuralgic etiology. The lady returned in three or four months with the report that there had been no cessation of the pain, and I consented to operate, and it was well that I did, for a more completely destroyed mastoid process I never saw. I could enumerate other similar cases, several that I have seen this winter, but it is not necessary, as enough has been said to show that mastoid inflammation and necrosis are not always heralded by palpable signs.

Dr. Gradle refers to the beneficial effects of the Wilde's incision, especially in the mastoid diseases of children. I think particular emphasis

sis should be laid on the fact that this incision is only suitable for very young children, where the antrum is superficially situated, and easily perforated by necrosis from within or a knife from without, and where the bone sutures are as yet unossified and allow a ready egress to pus. In these cases the Wilde's incision may still exert a curative influence, although even under such circumstances a more thorough operation is usually indicated, but in all other cases the incision named after Wilde has become practically obsolete, and should not be at all considered.

Dr. Gradle lays great stress upon the odor proceeding from the ear in suppurating cases. While this symptom is undoubtedly of value in most cases, I do not believe that implicit confidence can be placed upon it, and this opinion is shared by McEwen and others of high authority. The odor may be saprophytic and not especially pathogenic in its character, and I think that some of the most extensive cases of bone necrosis I have ever seen, have been in cases where but little odor existed, and where the discharge was of a thin almost colorless character, and moderate in quantity, and for weeks and months becoming conspicuous from its (at least) apparent absence. I therefore have learned not to depend confidently upon the odor nor quantity of the discharge in forming an opinion concerning the diagnosis, prognosis, and conduct of a case, but do not wish to be understood as ignoring these indications, as I believe with Dr. Gradle, that as a rule they are important guides.

Dr. Gradle refers to the bad hearing results following the radical operation, and while prepared to admit that impairment of hearing sometimes occurs, I believe as a rule that the hearing is either not reduced or is improved. It must not be forgotten that in these cases the ossicles are usually necrosed and retracted up into the attic, where they certainly are no aid to hearing, and in fact I believe are an actual impediment to the transmission of sound to the labyrinth. The same may be said of the presence of the usual mass of granulation tissue, and I believe that a removal of all such diseased and necrosed tissue huddled and grown together by pathological adhesions, will usually be followed, not by an impairment of hearing but by its improvement. So far then from considering that the radical operation is an injury to the hearing power of an individual, I believe that the chances are that the hearing will be improved, and but rarely impaired.

The chief danger lying in the path of the radical operation is facial paralysis, produced, I believe, almost invariably, not by injuring the nerve on its downward course, through the petrous bone on its way to the stylo-mastoid foramen, but wounded on its passage through the middle ear, as the nerve emerges through the inner tympanic wall and passes backward through the facial canal. The first situation of the nerve is well protected by hard smooth bone, and is unlikely to sustain an injury under such circumstances, although it may be done as the posterior meatal wall is removed in the course of the radical operation. The course of the nerve through the middle ear, however, is a different proposition. The bony covering of the nerve is at the best thin and fragile, and under pathological conditions may be fenestrated by necrosis, and an easy prey to vigorous curettement. It is from this point that I believe that most cases of facial paralysis proceed, and while it is an exceedingly unfortunate sequel to an operation, with care it can usually be avoided, and it may be said for our comfort, that these cases almost invariably recover.

Concerning our readiness to advise the radical operation; I do not believe that we can lay down any hard and fast rules as to how long a discharge shall be allowed to exist before operative procedures are advised. Each case must be judged upon its own merits, remembering that in practically all protracted aural suppurations the antrum, at least and very likely the mastoid cells themselves, are probably participating factors. We must also remember that probably about 50 per cent of the brain abscesses of the world are of chronic otitic origin, and that we should be prepared to endeavor to conservatively eliminate this great etiological factor of the world's mortality. Nevertheless we should remember that the radical mastoid operation is a serious affair, involving serious consequences, and not always fortunate in its results, and an honest persistent effort should be made to heal all chronic otorrheas by regular suitable treatment, before advising the operation. Failing in such an effort, however, by perhaps some weeks of faithful effort, we should not shirk our duty as aural surgeons, but should unhesitatingly advise the elimination of this most potential foe to life and happiness. Discussions have arisen as to how long a patient should receive conservative treatment before operative measures are advised. I do not believe that any rule can or should be crystallized covering this point. It is a matter of conditions, personal equation and experience, and must be settled as circumstances seem to dictate. It may be said, however, that the best aural surgeons, such men for instance as McEwen, Schwartze, Stacke, Knapp, Whiting, Dench and others, are steadily arriving at the point of promptly advising operation after a shorter and shorter interval of persistent discharge, believing that thereby generally better results are obtained, both as to hearing, health and life. Each man must, however, be guided by his own opinions and experiences and while conservatism is of course always a valuable aid to the surgeon in deciding hard problems, timidity may on the contrary often beckon him to his own and his patients destruction.

While much remains to be said, it will be said better by others, and I do not desire to trespass upon the time of the Society, and will simply say that I wish to thank Dr. Gradle for his paper, which has not only pleased but instructed me exceedingly.

Dr. William L. Ballenger: Dr. Gradle has covered the indications so well, that there is very little to say other than to commend the sentiment of his paper. However, there are

certain points that will bear a little further discussion.

In reference to the effects upon the hearing, I quite agree with Dr. Allport in his conclusions, but will not enter into a discussion of the reasons for so thinking, basing my opinion chiefly upon my own personal observation of cases, that it is exceptional for the hearing to be impaired, and the rule is for the hearing to remain practically normal or perhaps a little improved. There is an indication that occurs to me which might sometimes lead us to decide whether or not a radical operation is advisable, and I shall confine my remarks entirely to the chronic cases. This indication is found in the appearance of the drumhead, especially as to the location of the perforation. If the perforation is central, we can be almost sure, although the case is chronic, that the lesion is not a serious one, and may be improved or cured by simple local treatment. If the perforation is marginal, we may be practically sure that there is necrosis somewhere in the tympanic cavity, including the antrum and mastoid cells. We can still further differentiate, I think, by the location of the perforation. For instance, if the perforation is in the post-superior quadrant, and marginal, there is probably necrosis of the incus, and of the antrum, and hence the indications for the radical mastoid operation under such circumstances would be fairly well established if taken together with the other signs. If, on the contrary, the perforation is in the antero-inferior quadrant and is marginal, the necrosis is probably in the anterior portion of the floor of the middle ear proper, and might be easily reached with a curette through the drumhead or through the meatus, without undergoing an extensive operation. Without further elaborating this idea, I would simply say that I believe that by a careful study of the location and character of the perforation we can sometimes gain useful information as to the nature of the operation required, or the nature of the treatment required for the cure of the case.

I am somewhat surprised at the death-rate that Dr. Gradle has given, although it has been taken from rather meagre statistics, perhaps some three hundred cases from the Eye and Ear Infirmary for the last five years. Doubtless, they have had three or four hundred cases during that time, and I am surprised to know that the death rate was so large, although it may be the character of the cases coming to the Eye and Ear Infirmary is worse than usual, being poorly nourished, and not responding as well to treatment as the average run of patients with mastoiditis. This may account for the high death rate occuring in the institution.

I quite agree with Dr. Allport in his conclusions regarding odor. He has quoted MacEwen on this subject, who has stated that it is of very little value in determining the nature of the lesion; that it may be saprophytic in origin, and, therefore, has no significance as to the presence of necrosis. The essayist undoubtedly referred in his paper to the necrotic odor rather than that due to decomposition. Pathologists tell us, particularly those who have studied these cases, that, after two years of chronic suppuration there is apt to be caries and necrosis. While perhaps not every case of caries and necrosis should be operated on, still their presence is quite suggestive of danger, and as MacEwen has so well pointed out, a patient with chronic suppuration of the ear is like one going about with a load of dynamite in his head, not knowing at what moment it may explode. I have a case which typically represents this phase of the subject, giving the following history: Seven years ago the patient had scarlet fever, with a free continuous discharge from the ear for some time, but during the interim of seven years there was no appreciable discharge. The probabilities are, however, that, had an examination been made, a discharge would have been found in the external meatus. After seven years there was an acute exacerbation, with intracranial complications, and death.

I have seen three such cases as this within the last three or four years.

As to the advisability of waiting until conservative methods of local treatment have been repeatedly tried, before undertaking the radical mastoid operation, it is perhaps too broad a statement to make. We all see cases that will not tolerate repeated recurrent attacks, but go on to serious complications, and therefore, it would seem to me rather risky, with such persistent suppuration and other symptoms, recurring repeatedly, to adhere to conservative local treatment.

There is one remark I wish to make, and that is that the success of the operation will depend largely upon the exact technique that is used in its performance. In finishing the operation we should determine whether or not the external wound should be closed at once, or whether it should be left open for drainage. Either method may be successful under certain conditions. I simply raise the point, without entering into a detailed discussion of it, as it is not germane to the subject.

As to the exenteration of the ossicles, doing the radical operation, Dr. Gradle has raised the question if, for instance, one ear is deaf and the other is suppurating, he would hesitate to do the radical operation unless there were positive indications for it. The position is well taken, in a general way; the danger is that by performing a radical operation upon the suppurating ear we subject the patient to the danger of losing the hearing in the better ear. In chronic suppurations, as Dr. Allport has stated, we have fibrous adhesions and granulation tissue which interfere with the mobility of the ossicular chain, therefore, the ossicles are not useful, but are hindrances. In such cases a few years ago we were more apt to do an ossiculectomy than the radical operation. We abandoned this method because there was also necrosis which could not be reached through the external meatus, but could only be reached by doing a posterior operation. In such cases we should not try to preserve the ossicles of the ear, because they are already useless, and the patient is better without them. I now have a patient upon whom I did a radical mastoid operation who hears whispered numerals at ten feet; there is almost normal

hearing. There are many points upon which we may have a slight difference of opinion, especially in view of the fact that each case must be individualized.

Dr. A. H. Andrews: This subject is one of extreme importance and interest, not only to specialists, but to those who are not specialists, and I want to say, before entering upon any discussion of the paper, that if there is any time limit placed on the discussions, I shall not surpass it.

I want to approve of the conclusions which Dr. Gradle has reached, and also to say that it is impossible to formulate a list of symptoms that will cover all of the indications. As far as the hearing is concerned, I think we may very safely conclude that if the patient's hearing ability before the operation is a whisper at three feet, the operation will not improve it; while if it is less than that, there is a good chance for its being improved by the operation. I am speaking now of the chronic cases, in which the radical operation has been performed and the ossicles removed. I have had cases who have heard as well as the case Dr. Ballenger mentioned, but it is not the rule; the rule has been a whisper for about three feet after these operations.

With regard to the acute cases, I wish to say that pain is variable. The last patient upon whom I operated had been having a discharge from the ear for one month; he had suffered greatly until three or four days before I saw him. After that he had little pain. I expressed the opinion that an operation would be necessary before he got well. He was a man of considerable intelligence. He wanted to know if an operation was necessary, as his pain was slight. I used rather a homely statement, but one which he seemed to have no trouble in understanding, namely, that while the bone was inflammed it pained; after it was dead there was no further pain; there was necrosis, as an operation the next day revealed.

With regard to the danger in these cases, it is said that pus travels in the direction of least resistance; the inflammatory process is apt to precede the progress of the pus, and if the extension of the inflammatory process is outward, there will be external symptoms, but less immediate danger to life. If the tendency of the pus is inward toward the cranial cavity, there will be less external symptoms and greater danger to life.

Dr. Joseph C. Beck: There are one or two questions I would like to ask rather than to discuss this paper, since there was no allusion made to chronic tubercular otitis, and the indications for such an operation. It is an accepted fact in surgery, that in other parts of the body, in cases of tubercular disease the condition is treated rather by rest than operative procedures; and still there are cases of tubercular otitis media with definite symptoms of tubercular necrosis, and it is a question in these cases, since the lungs are usually involved, whether a radical operation should be performed or simply a curettement made through the external auditory meatus.

The author of the paper did not refer to the pathological condition known as osteo-sclerosis, without any suppuration, without any history of suppuration, so far as can be obtained from the patient, nor any visible signs of there ever having been any suppuration. Even at the operation there is no evidence of suppuration. Cases of sclerosis of the mastoid usually have the one severe symptom—pain. I presented this subject to the Society a few months ago, and I wish to say that I have examined the mastoid of such cases and have to my satisfaction shown that there are nerve filaments in these bones.

In regard to the indications for operation, where there is facial paralysis without evidence of marked involvement of the mastoid or middle ear, where there is no suppuration from the external auditory canal, what are we to do?

In regard to the diagnosis and the location of the perforation, as mentioned by Dr. Ballenger, there is one test that has been described in this country, first, by Dr. Snydacker, which consists in washing the pus from the middle ear and sedimentation by centrifuge, examining for bone dust and cholesteatoma. I can speak favorably of that test, as an aid with the probe in feeling necrotic areas or portions in the middle ear.

In cases of mastoid disease complicated by cardiac or valvular lesions, or pregnancy, should we operate or should we not? I mention this because in the last week or two I have heard of a case of double mastoid operation on a woman who was five or six months pregnant.

In regard to obtaining good hearing after operation, my experience has shown me this of the test cases I have made, that where the hearing was very poor before operation of exenteration of the ossicles, where I obtained a dry ear after the operation, the hearing has been better, but as time progressed and contraction occurred in the region of the foot-plate of the stapes and through the middle ear, the hearing became less, and I think, if the gentlemen who see their cases a good while will test them, they will find the hearing is not as good as after the middle ear has been cleansed.

Dr. William T. Eckley: I wish to ask a question for information, and know of no scientific body better qualified to answer it than this Society. Do surgeons, general or special, in these cases take precautions against involvement of the dural sinuses by obliteration of certain emissary veins? If such precautions are taken, I am unaware of the practice. If they are not taken, what is our justification in ordinary care and ordinary skill?

Certain emissary veins, constant in the adult, establish communication between the dural sinuses intracranially and the extracranial veins, both deep and superficial about the head. These veins and the foramina transmitting them, together with the intracranial and extracranial vascular areas with which they communicate, constitute an emissary system. Emissary veins have no valves; hence the direction

of their blood current at any given time depends on the relativity of intracranial and extracranial blood pressure. In lateral sinus thrombosis post-mastoid edema is attributable to the mastoid emissary vein; conversely, in suppuration of the soft parts covering the mastoid bone or necrosis of the mastoid bone itself, involvement of the lateral sinus may occur, as intimated by Dr. Gradle in his excellent paper.

The gravity of the mastoid emissary vein instanced by the readiness with which it becomes the seat of septic thrombosis, is common to all veins of this class, for they are similar in structure, function and communications. In erysipelas, cranial injuries, suppuration of the scalp and necrosis of the skull, said veins are prone to become the seat of blood poisoning. A number of these veins are, by virtue of their easy accessibility, operable structures. The angular vein, communicating extracranially with the facial and intracranially with the cavernous sinus, is responsible in facial erysipelas for septic thrombosis of this sinus. As a prophylactic procedure, why not ligate the angular vein? For like reasons, when emergency demands, why not ligate the parietal and mastoid emissary veins, if, as is well understood, the gravity of emissary veins, is shown by the readiness with which they become the seat of septic thrombosis, and thus of blood poisoning in disease and trauma of face, scalp, and cranium.

Dr. Gradle (closing the discussion): I feel so much flattered by the discussion which practically confirmed most of the statements made, that I see no reason why I should encroach upon the time of the Society with further details. The questions Dr. Beck asked I have not covered in the paper because they refer to relatively rare conditions upon which there is, as yet, very little unanimity of opinion, and in which very few individual surgeons have had any extensive experience.

I might defend one point of view a little more before leaving the topic, and that is with reference to the significance of the odor in chronic cases of otorrhea. In these cases, where absence of stench is extremely rare, the persistence of it is a very important prognostic indication. If we can remove the stench by one or two syringings, followed by boric acid insufflation, it is next thing to criminal to think of operation, for we can predict that nineteen times out of twenty the patient will get well in a few days or in a few weeks, at most. If, however, properly carried out conservative treatment fails to remove the stench, the case comes under a more serious head, and experience shows that those instances in which the stench persists are the ones which are most likely to lead to subsequent trouble. Invariably, when we examine our own histories of or the reports of other radical operations performed for vital indications, we will find the statement of suppuration from the middle ear with persistent stench.

THE SYMPTOMS AND DIAGNOSIS OF THE SUPPURATIVE DISEASES OF THE ACCESSORY SINUSES OF THE NOSE.

BY NORVAL H. PIERCE, M. D., CHICAGO, ILL.

The author pointed out those symptoms which are common to suppurative disease of all the accessory sinuses, and in so doing followed Hajek's lines of description. (a) Local symptoms; (b) general symptoms; (c) symptoms produced by complications.

As to local symptoms, headache is especially frequent in the acute forms of accessory sinus disease, but is by no means a constant symptom in the chronic form. Headaches which recur with every attempt at physical or mental exertion, or after unusual indulgence in tobacco or alcohol, may occur in empyemas which are otherwise symptomless (latent empyemas). A diagnosis of nervous headache should not be accepted until a careful rhinal examination has excluded disease of the accessory sinuses. The headache accompanying disease of the accessory sinuses is of a polymorphous character; that is, it may be neuralgic, or it may be diffuse or irradiating, or a combination of the two. These headaches, as systematized by Chiari, were mentioned and described in detail. The neuralgias which accompany disease of the sinuses are chiefly confined to the frontal, to the supraorbital, infraorbital, or maxillary, and the supradental nerves. The terminal branches may be simply irritated, and this irritation may by irradiation be conveyed to the trunk of the nerve, or the end branches may be involved in a true neuritis or perineuritis which may extend to the nerve trunk. There is nothing pathognomonic in the headaches or neuralgias which accompany disease of these sinuses to differentiate them from the same phenomena occurring in other diseases, such as anemia, nephritis, cardiac or stomach disease. In the presence of inflammatory disease of a sinus, we should be on our guard against regarding it as the

causal factor of headache lest other disease of far greater etiological moment exists. Again, the most advanced disease of these sinuses may exist without pain of any kind being present at any time during their history. Nor is the localization of pain difficult for any particular sinus. The pain from ethmoidal or antral disease may be projected to the frontal region, or empyema of the sphenoidal sinus to the occipital region. In acute disease of the frontal and maxillary sinuses the localization of pain on pressure over their respective areas is fairly constant.

The presence of a mucoid, muco-purulent, or caseous purulent secretion, which may be more or less fetid, is the most constant and prominent symptom of inflammatory disease of the accessory sinuses. When the discharge is bilateral, one is justified in suspecting the existence of an empyema.

Disturbance of olfaction is frequently present, and is due either to the mechanical presence of the purulent secretion in the fissura olfactoria, or to an inflammatory change or degeneration in the nerve endings. Subjective kakosmia is most frequent in empyema of the maxillary sinus. Nausea and vomiting occur and may be erroneously attributed to gastritis, which either does not exist or is consequent upon the empyema.

There is nearly always more or less interference with nasal respiration. This is due to the presence of the secretion itself or to polypi, hypertrophies, spurs, or deflections of the septum. Reflex symptoms, such as bronchial asthma, occasionally occur, but are due in all probability more to the polypi or hypertrophies (intranasal pressure), etc., than to the empyema *per se*.

Fever is a nearly constant symptom of acute inflammations of the accessory sinuses, and is to be ascribed to the general infection of which the empyema is a localization.

Under the head of symptoms of congestion and depression, the author grouped hyperemia of the face; scintillations before the eyes; decrease in frequency of the pulse; intolerance for tobacco and alcoholics, because of the intolerable congestion which they produce is the head; irritability of temper; insomnia, and the general symptoms of neurasthenia, palpitation, especially after eating, indolence, somnolence, hypochondria, aprosexia nasalis, all of which may be regarded as a direct result of a chronic sepsis.

Pain in the acute variety is sometimes present over the anterior wall of the maxillary antrum. There is a point of predilection for the sensation of pain over the processus frontalis. Not infrequently the patient complains of a sensation as if the teeth on the affected side were too long or longer than their fellows. Empyema of dental origin is sometimes preceded by the well marked pain of dental caries. Most frequently the symptoms of acute coryza mask any local symptoms on the part of the antrum.

As to nasal discharge, the discharge from the maxillary antrum disease is usually expelled through the anterior nares. When, however, there are accessory openings, the discharge may find an outlet in the post-nasal space. Eczema of one introitus is a fairly constant symptom of maxillary sinus disease.

With reference to objective symptoms, the presence of a purulent secretion in the nose is one of the most important, and in numerous cases its presence and location will attract attention to one or the other of the accessory sinuses. Occasionally, by posterior rhinoscopy one can find the muco-purulent secretion coming from an accessory opening of the maxillary sinus. Again, it is possible by reversing Politzer's procedure, that is, by suddenly exhausting the air in the nose, to suck the purulent secretion of the maxillary antrum through the ostium.

The author discusses atypical hypertrophies of the middle meatus; dilatation of the maxillary sinus, and then expatiates upon the diagnosis. The diagnosis of empyema of the maxillary sinus can be invariably made by means of two methods: First, aspiration or irrigation of the maxillary antrum, and by transillumination, or, second, by means of transillumination, and then by irrigation of the antrum in case a positive result by the former procedure is obtained. Aspiration alone is not sufficient, as the secretion may be

too small in amount or too thick to pass through the aspirating needle. One may irrigate the maxillary antrum through a natural opening, i. e., through the ostium—or an accessory opening, or by means of an artificially produced opening. Relatively few cases can be reached through the ostium or natural opening—probably one in ten. However, it should be an invariable practice to attempt irrigation through a natural opening before surgical puncture is adopted.

Speaking of transillumination, he said that this procedure was first used by Heyring for the diagnosis of empyema of the maxillary sinus, and is carried out in a thoroughly darkened room. An electric lamp is placed in the mouth, held firmly between the teeth by the patient, the lips being closed tightly around the handle of the lamp. Before doing this, one should see that the patient does not have artificial plate, gum or tobacco in the mouth. After turning on the light, a rosy glow is found outlining the lower portion of the face. Especially marked is the light in the infraorbital region, and in the pupils there is also a glimmer of the transilluminating light. In empyema of the maxillary antrum one side of the face remains dark, or at least there is an infraorbital shadow. The value of transillumination is estimated differently by diffenent observers.

In frontal sinus disease headache or neuralgic symptoms are more prominent and appear more frequently than in inflammation of any of the other sinuses, with the exception perhaps of the anterior ethmoidal cells.

In the diagnosis in every case of suspected frontal sinus disease one should endeavor, first, to sound the frontal sinus through its natural opening. Only when this is accomplished and pus is seen flowing down the probe in increasing quantities may one be sure of empyema of the cavity. Having done this, one should proceed with irrigation. Probably in much less than one-half of the cases can we pass a probe from the nose to the frontal sinus.

The general symptoms of acute or chronic empyema of the anterior or posterior ethmoid cells have little or nothing to distinguish them from those occurring in the course of inflammation of the frontal sinus.

The author referred to the division of empyemas of the ethmoid cells, particularly to the obscure and manifest forms. He also spoke of latent or closed empyema, and open empyema.

The subjective symptoms accompanying empyema of the sphenoidal sinus are as inconstant and as non-pathognomonic as empyemas of other sinuses. We must depend for our diagnosis on anterior and posterior rhinoscopy, and the position of the secretion is the first thing to look for. Only rarely are we able to observe the ostium of the sphenoidal sinus by anterior rhinoscopy. Occasionally, however, in cases when the fissura olfactoria is wide, we may observe the purulent secretion coming directly from the ostium, in which case the diagnosis is at once complete.

Finally, the author called attention to one complication of sphenoidal empyema—the extension of the inflammatory process to the orbit. When this occurs, the infection causes abscess of the orbit. The symptom-complex of sudden blindness and exophthalmos is typical. From the orbit the ophthalmic vein may become thrombosed, which thrombosis extends to the cavernous sinus, with accompanying meningitis.

OBSERVATIONS ON THE CHROMATIC VARIATIONS IN THE PRECIPITATED AND SEDIMENTED CHLORIDES, PHOSPHATES AND SULPHATES OF THE URINE.

BY DRS. E. F. WELLS AND JOHN C. WARBRICK.
CHICAGO.

In making a quantitative analysis of the urine for chlorides, phosphates and sulphates using the centrifuge for the purpose of throwing down the precipitates we found certain chromatic variations in the sediment for some time.

For about eighteen months an accurate notation on this point has been made in every urinary analysis made in our laboratories.

The examinations numbered more than 2000 and were numerous enough and in-

esting to warrant an analysis of the results of our observations and we give these here in the form of a preliminary report.

The urines analysed were from persons mainly beyond middle age and from invalids of every age affected with a variety of complaints. These included acute infections, tuberculosis, carcinoma diabetes, nephritis, disturbances of the circulation, anemias, etc.

In nearly all the cases a specimen of urine for 24 hours was used and the examinations were made daily or less often.

The analysis was done in the ordinary way and included the nature of specimen, quantity in 24 hours, transparency, sediment color, reaction, specific gravity, total solids, urea, chlorides, phosphates, sulphates, albumin, sugar, indican, hemoglobin, casts, blood elements, epithelium, crystals, etc.

The chlorides were thrown down by the 10% solution of silver nitrate.

The phosphates by the alkaline magnesium solution and the sulphates by the standard acidulated chloride of barium solution. The chlorides showed the greatest variety in color and the following remarks are confined to this part of the subject:

The colors of the chloride sediment varied from the purest white, through many shades of yellow, orange, red, green, to black as shown in the drawings.

No two specimens were exactly alike.

The white sediments were more numerous than any other and the shade varied a great deal; through pure white; yellowish white, white with a pinkish tinge, white with a bluish tinge, grayish and dirty white.

The yellow sediments came from the yellowish white and passed through the various shades of light yellow, canary yellow, ochre and deep yellow losing themselves in the oranges, salmon colors, old gold and green sediments.

The reds began with shades of pink then through various shades of pink, pale reds, yellowish red, rose tints, wine colors to dark reds, light, dark, yellowish and seal browns and blacks. In many cases the colors were very pure and beautiful.

It was necessary to shake the test tube after the addition of silver nitrate to prevent a mottled appearance from forming.

There was no constancy observed in the variously colored chloride sediments with the color, reaction, specific gravity, total solids, total urea, diazo reaction, indican, sugar, etc. For example: Although the white sediments were usually obtained from yellow urines still the sediments were also seen in red and brown urines.

The yellow sediments were mainly noted in yellow urines but were also seen in the red and brown urines. Old gold sediments were found in light yellow, yellowish red, yellow and red urines.

Orange sediments were found only in red urines. Pink, light red and yellowish red sediments were seen in light yellow, yellow, reddish yellow, yellowish red, red and brown urines.

Rose tinted and urine colored sediments were noted in light yellow, yellow and red urines.

A single lilac sediment was noted in a yellowish red urine. The brown sediments, light brown, yellowish brown, seal brown, etc., were observed in red urines but in some cases were seen in yellow and light yellow urines. The brownish black and black sediments were met with in light yellow and yellow urines. In one notable case of chronic interstitial nephritis in which the urine has been continually light yellow, the sediment was regularly black for several years until recently when it changed to a dirty white without any apparent cause.

In comparing the colors of the chloride sediment with the specific gravity of the urine we found the average specific gravity diminished as the colors darkened but the lowest and highest densities were observed in every group of color shades.

The presence of indican, sugar, albumin the diazo reaction did not seem to have any influence on the colors neither did medication, especially with reference to salol, guaiacol, acetanilid, salicylate of soda, oil of wintergreen, morphia, etc. The bulk percentage of the chloride sediment which

varied from a trace 0.1% to 50% does not have any effect on the color.

In some groups of colors, e. g., wine colored sediments the percentage was uniformly low while in others as the pink sediments they were uniformly high.

HYPERNEPHROMA OF KIDNEY, WITH REPORT OF A CASE.*

BY ROBERT WALLACE HARDON, M. D., HARVARD.

Professor Orthopedic Surgery, Post-Grad. Med. School; Professor Orthopedic Surgery and Diseases of Joints, Dearborn Medical College, Chicago, Ill.

The first systematic work upon hypernephromas was reported by Grawitz in 1883, in which it was shown that they were of suprarenal origin. The most complete work up to 1902 is to be found in Borst, where will be found also reviews of all work done up to that time, with references to the same. Both Grawitz and Klebs have conclusively shown that the adrenal tumor is sometimes entirely outside of the kidney capsule, and sometimes contained within. It may be separated from the kidney by a capsule apparently formed by a condensation of renal tissue. At other times a capsule of the kidney itself surrounds it. Many authorities state that for many years it has been well known that accessory adrenal glands have been found beneath the capsule of the kidney, under the surface of the liver, in the retroperitoneal tissues, in the meshes of the solar plexus, along the course of the spermatic artery, in the spermatic cord (simulating fatty tumors), and on the anterior mesiometrium near the ovary. In the latter position the rests have only been met with in the fetus at or near full term. As the thyroid gland is frequently transformed into a large tumor, so also may be the adrenal gland, and the similarity of the latter tumors to those enclosed in the kidney capsule is so marked as to be very striking. These tumors usually grow rapidly, but may exist for a very long time without attaining any great size or showing any secondary involvements. Again, secondary malignant metastases have been found where the primary tumor seemed to be benign and to have attained no great size. They are found in both, and are most frequent between the ages of thirty-five and sixty years.

The kidney is atrophied to a greater or less extent, varying with the compression exerted by the growth. Gross examination shows a more or less nodular surface, sometimes so little marked as not to be readily noticeable. On section, a whitish or yellowish appearance is shown, and the tumor is apparently composed of an aggregation of nodular masses. Hemorrhagic and necrotic areas may or may not exist. The capsule separating the tumor mass from the kidney structure is well marked, firmly adherent, and of a firm fibrous structure.

If the capsule is invaded by tumor cells, the growth is more malignant. At times the microscopical appearance of sections of the tumor is so strikingly like that of the adrenal that it is impossible to distinguish any difference.

Chemically lecethin, in about the same percentage as in suprarenal glands, and glycogen, occasionally present in the latter, are found. The presence of glycogen supports the view that the rests arise in embryonic tissue. Croftan pointed out the iodine reduction reaction common to both the hypernephroma and the adrenal gland, in 1901. In this case the iodine reduction reaction showed after the specimen had been in a formalin bath for several hours.

It is probable that many tumors of the kidney removed and reported as sarcomas, where the patient lived a year or more with no return of symptoms, in reality belonged to that variety which imitates the structure of the adrenal gland.

If malignant, the metastases usually extend along the blood vessels to the lung, liver and often early to the bones. So also the renal vein is often involved early with extensions, the vena cava. Secondary involvement may be direct to adjacent tissues if the capsule is broken down. Bevan, in an unreported case, found early extension to the intestines, and was able to make a diagnosis

*Read before the Chicago Medical Society, Dec. 2, 1903.

from necrotic masses passed with fecal matter without operation.

Clinically there is usually not much to aid. In a number of reported cases hemorrhage of

(1) Stained with methylene blue and eosin. Low power. Upper zone resembling adrenal tissue. Lower zone showing fibrous capsule encroaching upon kidney tissue.

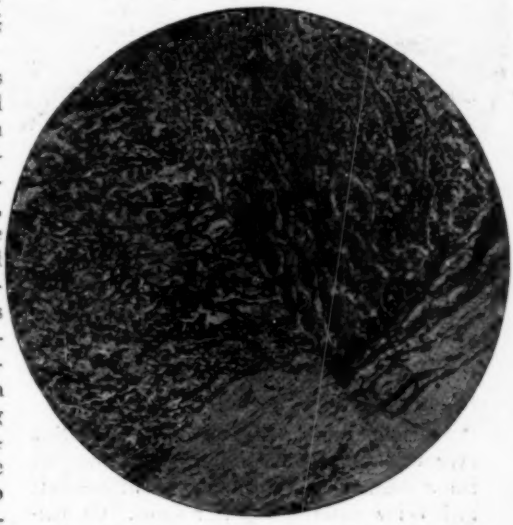
a more or less intermittent character was noted. In these cases it is usually well marked, and at times clots may be found in the bladder, or even in the ureter of the affected side. Again, there may be no hemorrhage. Many have marked pain in the back, while others have pain most marked over the tumor mass in front, which may extend well down in the groin, or lower. These symptoms would apply equally well to calculus pain, and the tumor mass to a coincident hydronephrosis. Both may give a sense of fluctuation. It seems probable, however, that with intermittent large hemorrhage containing clots, that the tumor is more likely to be malignant. Nothing has yet been found in the examination of the urine which will lead to an absolute diagnosis, and no absolute methods of medical differential diagnosis are of avail.

History. Mrs. J. W. U. 60 years old. Married. Occupation, housewife.

Family History. Mother died when patient was young. Cause unknown. One brother died of intestinal trouble contracted in the Civil War. Two brothers died young, cause unknown. One brother and two sisters living and in good health.

Personal History. Born in Indiana. Lived in Chicago past twenty-five years. Malaria when a child with occasional recurrences. Married at sixteen years. Never pregnant. Menstruation at 14. Always regular, but scanty. Occasionally painful. Ceased in early forties. For last twelve years has had bearing down sensation in lower abdominal region, accompanied by backache and headache and at one time had some pain in urinating. During this time wore a pessary with some relief. These latter symptoms have been much less marked in past two or three years. About fifteen years ago, had an operation for ulcer of rectum.

Present Indications. About two years ago a slight enlargement was noticed in the right lumbar region, which has progressively enlarged and for more than a year has been tender to pressure, so much so that could not bear the pressure of corsets and felt uncom-



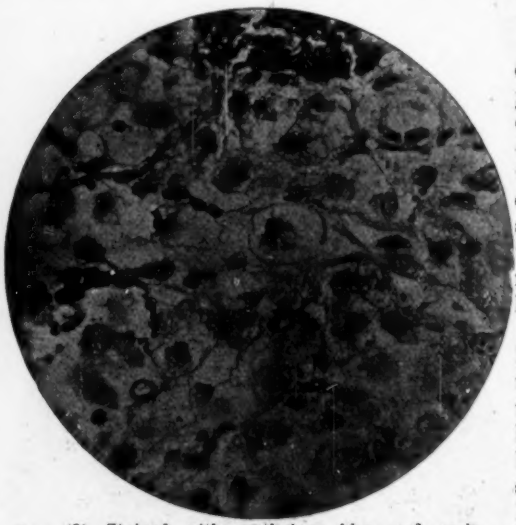
(2) Stained with methylene blue and eosin. Low power. Showing resemblance to adrenal cortical substance. On the right is normal adrenal gland.

fortable during the last six months when clothing fitted closely and because of pain has been practically confined to the house for

a like time. Has also had pain in splenic region and in right back, just above liver line. Appetite vicarious but generally much below normal and missed many meals.

Lost about 15 pounds in last two years. No recent difficulty in urination. Walked into hospital.

Physical Examination. Fairly developed. Poorly nourished. Weight 94 pounds. A neurasthenic. Skin yellowish, muddy, dry. Eyes, marked arcus senilis, myopic. Tongue, moderately coated, moist. Heart, Sounds weak, otherwise normal. Pulse 90, weak. Arteries not easily compressible. Lungs and liver negative. Spleen slightly enlarged.



(3) Stained with methylene blue and eosin. High power. Showing large polygonal and oval cells with small excentrically placed nuclei.

Could be felt. Abdomen, pressure in splenic region causes some pain.

In right lumbar-iliac region a swelling over which percussion is dull from above just below edge of liver to a line about one-half inch below anterior superior spine. On palpation a slightly movable tumor could be felt, having a longitudinal axis of six and one-half to seven inches. Its axis being at about 45° to a cross section.

Pelvic examination and reflexes, negative. Extremities, cold.

Inflation by rectum showed tumor posterior to colon.

Examination Urine. Week before operation: Acid 1016; pale yellow; clear; urea 1.2%; slight trace of albumen. Sediment: few pus cells, and bladder cells and amorphous detritius.

Examination two days before operation: Acid 1012; pale yellow; clear; urea 1.2%; slight trace albumen. Sediment, few pus cells, little blood, bladder cells.

X-Ray examination. Showed darkness in lower part of middle third of tumor, resembling that formed by a stone.

Provisional diagnosis. Hydronephrosis; stone in body of kidney.

Hypernephroma.

The case was seen by Dr. A. R. Crofton in consultation, who made practically the same findings, and who inclined to a provisional diagnosis of hypernephroma. He reported 40% of hemoglobin. Urine as above and advised operation on the ground that patient's condition would probably get gradually worse and if hypernephroma, the liability of metastic extentions which existed, and that mental conditions would not be improved by long consideration of an operation.

Entered hospital two days following. Pulse, 100, weak. Temperature 98°. Given usual catharsis and skin prepared. Operation, following morning. Urine; acid 1009, light straw color. Clear. Urea 1.2%. Albumen, none. Sugar, none. Sediment, squamous epithelium, occasional pus cells. Few calcium oxylate crystals. Operation, October 3, 1903, at Mercy Hospital.

Legs and arms bound in cotton. Ether anaesthetic. Patient on left side with sandbag lumbar elevation of five and one-half inches. Lumbar incision to crest of ilium and then forward. Wound seven inches in length down to suprarenal tissue. The latter was separated with fingers, when an adhesion covering an area the size of a fifty cent piece to the colon was found, and separated.

Tumor pressed by assistant, up into wound and lifted out of cavity. Pedicle, including renal artery and vein, clamped and tied, first lightly again tightly beyond clamps. Ureter tied off low down. Examination of sur-

rounding tissue showed no enlarged glands, no irregularity on under surface of liver.

Wound dried, small gauze drain inserted, edges of cut tissue approximated layer by layer and sewed with catgut. Skin with silkworm gut and dressings applied. Operation forty minutes.

During operation pulse went up to 180, and 2000 c. c. of normal salt solution injected. Catheterized before leaving the operating table.

Returned to bed. Pulse fell to 104 in twenty minutes following salt solution. No vomiting followed the operation.

After operation. Lips moistened with water or weak tea, as soon as desired, and allowed in small amounts.

Catheterized seven hours after the operation. 180 c.c. of urine. After this passed urine voluntarily.

First day. Liquids freely and soft diet. 590 c.c. urine in first 24 hours. Examination of urine. Acid 1020, light yellow. Urea 2%. No albumen.

Second day. Given enema three times in bed for flatus. Had a great deal of pain in trying to retain enema. Later allowed to get out of bed on commode when much flatus passed easily. Was out of bed for forty minutes at this time, and every day following for an increasing length of time. On this day gastro-intestinal disturbance caused diarrhoea with much mucous and flatus for which temporary treatment was required.

(a) Entire tumor about 3/7 actual size. Tumor and remaining kidney substance laid open with usual incision.

Allowing patient out of bed gave her great comfort and caused much less distress during bowel movement than when movements were had in bed. Sat up in all three hours and a quarter. Drainage removed. Wound dry.

Urine, 670 c.c. in 24 hours. Liquids pushed.

Examination of urine, Acid 1020 sp. gr., light yellow. Urea 2%. No albumen.

Third day. Urine, 880 c.c. in twenty-four hours.

Fourth day. Urine, 1180 c.c. in twenty-four hours.

Fifth day. Urine, 1300 c.c. in twenty-four hours. Part of sutures removed, wound dry. Regular diet, forced liquids.

Sixth day. Urine, 920 c.c. in twenty-four hours.

Seventh day. Urine 1290 c.c. in twenty-four hours. Examination urine, Acid, sp. gr. 1015, straw color. Urea 1.9%. No albumen, few pus cells.

Eighth day. Urine 1090 c.c. in twenty-four hours. Rest of sutures removed. One stitch infection. Out in wheel chair.

Ninth day. Urine 1710 c.c. in twenty-four hours. Out in wheel chair in garden. Weight 96 pounds.

Tenth day. Urine, 1650 c.c. in twenty-four hours. Appetite fine.

Eleventh day. Urine, 1590 c.c. in twenty-four hours. Appetite fine.

Twelfth day. Urine, 1930 c.c. in twenty-four hours. Appetite fine.

Thirteenth day. Urine, 1450 c.c. in twenty-four hours. General tonics.

Fourteenth day. Urine 1970 c.c. in twenty-four hours.

Fifteenth day. Urine 2080 c.c. in twenty-four hours.

Sixteenth day. Urine 1790 c.c. in twenty-four hours. Examination, Acid, sp. gr. 10.10, light yellow, clear, urea 2%. No albumen, no sugar. Occasional pus cell. Occasional hyaline cast. Out of bed all day. Could have gone home.

Seventeenth day. Urine, 2080 c.c. in twenty-four hours. Weight 97 pounds.

Eighteenth day. Urine 1790 c.c. in twenty-four hours.

Left hospital twenty-seventh day after operation. Weight, 100½ pounds.

Urine examination: Acid, sp. gr. 1012, pale yellow, clear. 0.8% Urea. No albumen. No sugar casts.

November 1st, nearly two months after operation: Weight, 108 pounds.

Examination of Urine: Acid, sp. gr. 1012, light straw. No albumen, no casts, occasional leucocyte.

Much improved physically and nervously. Eating well, going out doors to stores. Still complains of some pain in right lumbar region and splenic region and elsewhere at times, but entirely free the most of the time.

NOTE—In a letter dated January 10, 1904, from California, the patient writes as follows: "I go out for a long walk every morning. Get tired, but don't mind when I rest up. I get weighed every Monday morning, and now weigh one hundred and thirteen." She is in fact doing as other people of her age in fair health do.

Pathological Description of the Specimen. Weight, 465 g.m. Irregular in shape. Greatest diameter 10 c.m.; length, 15 c.m. Upper four-fifths of the surface roughened and in places slightly nodular, the lower portion smooth normal kidney capsule. Over a surface about the size of a fifty cent piece a slightly oozing surface where adhesions had taken place to the colon.

On section, about four-fifths of the specimen shows new growth extending down to and including about three-fourths of the pelvis, and is surrounded by a well marked capsule, which separates it from the remaining normal kidney substance. The capsule was five or six times as thick as that of the normal kidney and firmly adherent. The body of the tumor was of a yellowish color for the most part, with whitish areas more or less necrotic, and a few small hemorrhagic areas existed.

The microphotographic reproductions show well the finer pathological findings.

I am indebted to Dr. A. A. Goldsmith for the preparation of specimens and Dr. F. R. Zeit for the pathological confirmation of the diagnosis.

CONCLUSIONS.

1. Hypernephromas are malignant, sometimes benignant, and may exist for years without any secondary involvement or any sign of malignancy.

2. When malignant, not so much so as sarcoma.

3. Those having an intact capsule justify a better prognosis than when the capsule is broken down.

4. Those showing marked hemorrhage be-

fore operation do not justify as good a prognosis as those that do not.

5. That the tumors grow from embryonic adrenal nests.

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103 State street.

ORDER OF PROCEEDINGS.

REGISTRATION OFFICE—ODD FELLOWS HALL.

FIRST DAY—TUESDAY, 9 A. M.

I. Call to order in a general session, Unitarian Church, by the President.
Carl E. Black, Jacksonville.

II. Report of Committee on Arrangements, E. Mammen, Bloomington.

III. Announcements by the President.

IV. 9:15 A. M. Call to order of Section One, Unitarian Church.

V. 9:15 A. M. Call to order of Section Two, Odd Fellows Hall.

VI. 1:00 P. M. Adjournment.

FIRST DAY—AFTERNOON.

VII. 2:00 P. M. Call to order for Continuation of Sections One and Two.

VIII. 2:00 P. M. Call to order of the House of Delegates by President in the Assembly Room, Illinois Hotel.

FIRST DAY—EVENING.

IX. 8:00 P. M. Call to order by Vice President, Unitarian Church.
Robert A. Preble, Chicago.

X. Invocation.
Rev. L. D. Osborn, Ph. D., Bloomington.

XI. Vocal Solo.
Mrs. F. C. Vandervort, Bloomington.

XII. Address of Welcome.
Hon. Adlai E. Stevenson, representing Mayor George W. Morrison.

XIII. Address of Welcome, On behalf of McLean County Medical Society.
F. C. Vandervort.

XIV. Response on behalf of the Society, President Carl E. Black.

XV. President's Annual Address.
Carl E. Black, Jacksonville.

XVI. Address of Section One.
William E. Quine, Chicago.

SECOND DAY—WEDNESDAY MORNING.

I. 9:00 A. M. Call to order for Continuation of Sections One and Two.

II. Special order Section One, Symposium on Tuberculosis, Unitarian Church.

III. Section Two, Odd Fellows Hall.

IV. 1:00 P. M. Adjournment.

SECOND DAY—AFTERNOON.

V. 2:00 P. M. Call to order Sections One and Two.

VI. Special order Section Two, Symposium on Carcinoma, Odd Fellows Hall.

VII. 2:30 to 4:00 P. M. Reception for visiting ladies by Mesdames J. W. Smith, W. E. Guthrie, E. Mammen, J. B. Taylor, J. L. Volten and Dr. E. J. Hyndman, at the residence of W. E. Guthrie.

SECOND DAY—EVENING.

VIII. 7:00 P. M. Reception and Annual Dinner, Cooper Hall.

THIRD DAY—THURSDAY MORNING.

I. Call to order for Continuation of Sections; Papers and Discussions.

II. 10:00 A. M. Call to order in General Session by President to receive report of House of Delegates.

III. 1:00 P. M. Adjournment.

THIRD DAY—AFTERNOON.

IV. 2:00 P. M. Call to order for Completion of Sections One and Two.

V. Induction of the President elect.

VI. Final Adjournment.

SECTION ONE.

PRACTICE OF MEDICINE, MEDICAL SPECIALTIES, MATERIA MEDICA AND THERAPEUTICS, ETIOLOGY, PATHOLOGY, HYGIENE, STATE MEDICINE AND MEDICAL JURISPRUDENCE.

Chairman, J. W. Pettit, Ottawa.
Secretary, E. B. Montgomery, Quincy.

Address—"The Powers and Limitations of

the Physician as Distinguished from the Surgeon." William E. Quine, Chicago.

Symposium on Tuberculosis.

Set for Wednesday at 9 a. m., Third Floor Odd Fellows Hall.

1. (a) Prevalence and Mortality from Tuberculosis in Illinois. George W. Webster.
(b) Charles L. Mix.
(c) Frank Billings.
(d) Robert M. Preble.
(e) Economic Loss from Tuberculosis in Illinois. Homer M. Thomas.
(f) Duty of State. H. N. Moyer.

2. "Regarding the Contagiousness of Typhoid Fever and the Vitality of the Typhoid Germ." F. D. Rathburn, Galesburg.

1st. The vitality of the typhoid bacillus in the living body, or for what length of time after convalescence is the patient liable to communicate the disease by the excreta.

2. The vitality of the germs outside the living body, and their power to generate in soils and other favorable media.

3d. The proper disposition of the excreta in order to prevent the spread of the disease.

The germ has been shown to remain active for a considerable length of time after the fever in (1) post typhoid abscess; (2) the urine; (3) contents of lung cavities; (4) gall bladder and (5) evacuations from the bowels.

The Eberth bacillus has been found active and able to reproduce itself in (1) the body of those dead of typhoid fever; (2) soil; (3) water; (4) sewage, etc., for months, and in some instances probably for years.

The proper disposition of the excreta the only method of prevention. Cremation the best method. When cremation is not practicable suggestion made to deposit excreta in heavily glazed earthen ware receptacles, treat with germicides, and bury deeply at a distance from the water supply.

3. "Pancreatitis, with Report of a Case." F. A. Guthrie, La Salle.

4. "The Physicians Civil Liability for Malpractice." A. L. T. Williams, Pana.

5. "Mental Disorders of Neurasthenia." Frank Parsons Norbury, Jacksonville.

Eductions: Mental symptoms are of importance in every case. They vary from slight mental incapacity (asthenia) to pronounced state, "border line" to insanity. Principal symptoms are—introspection, imperative conceptions, morbid fears, irritability (marked by absence of symmetry), nagging, fault-finding, excessive emotional outbreaks.

Physical Factors: Heart, kidney, stomach, bowels, menstrual and sympathetic nerve implications, Anaemia.

Differential Diagnosis: From premonitory symptoms of paralytic dementia, true mental disease, spinal cord lesions, focal organic diseases of the brain, etc., etc.

Treatment: Isolation, systematized rest, with adjuvant indicated in each case. Treatment of associated physical factors.

6. "Medical Ethics; Its Relation to the City Health Officers." F. E. Wallace, Monmouth.

It may seem strange that such a subject is brought before a society of physicians for discussion. The golden rule should be ever before us. The Health Officer should be on friendly terms with every physician because they must work together for the common good.

The laity is a very critical judge.

They should be enlightened and should thoroughly understand the necessity for preventive measures. Some physicians are possessed with "cussedness" as well as the laity and consequently many lives are sacrificed. Criticisms are many for the health officer and physicians could prevent it.

Boards of Health receive their power direct from the statutes. Because your opinions differ from those of the Health Board, don't cause trouble and hard feeling. Don't give adverse opinions, but be willing to take the opinions of the higher authorities, on diagnosis. How happy the physician who can dwell in unison with his fellow colleagues. Let us help the Health Officer to hold up his hand. Don't be a "knocker." Be a good fellow and hide your little hammer.

7. "The Treatment of Appendicitis from a Pathological Standpoint." E. C. Franing, Galesburg.

Differences of opinion on the treatment from a clinical standpoint. Physio pathology. Forms classified bacteriologically. Forms classified pathologically. Treatment of various forms, especially discussing the Ochsner and operative treatments.

8. "The Relation of Medicine to Surgery." James E. Coleman, Canton.

The author thinks that where as in former days, the surgeon was first and foremost a fine physician, now surgeons neglect medicine. Is Pneumonia a surgical disease? Or Tuberculosis? Some avoidable surgical affections of the ovaries.

9. "Myocarditis Occurring in Elderly People with Special Reference to Treatment." E. H. Butterfield, Ottawa.

10. "Leukaemia: With Special Consideration of its X-Ray Treatment." Everett J. Brown, Decatur.

Reasons for reporting and stand-points taken and history of cases of the Splenomedulary, having a Leucocyte count of eight hundred thousand, and a greatly enlarged spleen in which X-Ray caused disappearance of all symp-

toms. Considerations of cases in literature so treated. Summary.

11. "Polyneuritis." L. Harrison Mettler, Chicago.

Multiple neuritis a much abused term. The general conception of the disease and the text-book descriptions of it are far too narrow. It is a disease more or less of the entire nervous apparatus. Explanations of its peculiar symptomatology. Central and peripheral types of the disease. Relative significance of the interstitial and parenchymatous disease processes. Relative importance of the particular etiological influences. Clinical indications of the extensive nature of the disease. Pathological proofs. Differential diagnosis of types varying upon treatment. Practical conclusions.

12. "Bacteriuria: With Special Reference to Colon-Bacilluria." Arthur R. Elliott, Chicago.

13. "Some Disorders of Sleep." Hugh T. Patrick. Chicago.

14. N. S. Davis, Jr., Chicago.

15. "Atonic Dilations of the Stomach with Report of Cases, also Methods of Treatment." Milton N. Mack, Chicago.

16. "Mosquitoes and Malaria." Thomas H. Bath, Bloomington.

Successive scientific data confirming the mosquito as the definite host of malarial fever.

17. "Defective Speech." James Moreau Brown, Chicago.

A general consideration of speech disorders, laying particular stress on etiology and treatment and discussion of the so-called "Stammering Institutes" and reasons why cases of this character should be cared for by the physician.

18. "The Exercise of Preventive Medicine a Factor in the Social Evolution of Man." S. O. Hendrick, Henry.

19. "Some Remarks on Tuberculosis in Young Children; with Report of Two Non-Tuberculous but Suspected Cases That Illustrate Some of the Points of Differential Diagnosis." Robert H. Babcock, Chicago.

20. "Defects of Vision and Hearing in the Public Schools." J. Whitefield Smith, Bloomington.

21. "The Pneumonia Problem." Arnold C. Klebs, Chicago.

21. (1) Investigations into statistical data about pneumonia and its increase in the United States and abroad. (2) Comparison of non-tuberculous respiratory diseases and tuberculosis, clinical and statistical. (3) To what extent do these qualify us in speaking of the "Pneumonia Problem?" (4) Dangers of pneumonia, to the individual and to the community, and how they can be met.

22. "Treatment of Pneumonia." Charles J. Whalen, Chicago.

Increasing prevalence of. Pneumonia a contagious disease. Comparison of mortalities from pneumonia and tuberculosis. Possibility of making headway against the disease from the prophylaxis standpoint. Need of popular education of the public as to the dangers of pneumonia. No known specific for. Expectant treatment most satisfactory. Rest, ventilation, sponging, elimination, poultices, and blistering. Value of antipyretics, serum therapy, venesection, arterial sedatives, oxygen, opium, creosote, normal salt solution, suprarenalin, stimulants, expectorants, etc.

23. "Brain and Sinus Diseases Resulting from Purulent Otitis Media." A. H. Andrews, Chicago.

Brain and Sinus complications more common than generally supposed. Pus in mastoid escapes in one of six directions. Intracranial complications may be: general meningitis; extradural abscess; cerebral abscess; cerebellar abscess; sinus disease. Symptoms, treatment, report of cases.

24. "Radio-Activity." J. C. Sullivan, Cairo.

Primordial matter. The sun's rays are electrical and curvilinear. The cause of all radio activity and absorption. The X-Ray can duplicate any therapeutical result obtained by radium.

25. "The Mineral Springs of Illinois: Their Therapeutic Application." George T. Palmer, Chicago.

26. "Lumbar Puncture: Its Value in Diagnosis and Treatment." E. P. Cook, Mendota.

27. "Joint Affections as Viewed by the Internest; Their Classifications and Brief Considerations." August F. Lemke, Chicago.

Reasons for attempt at classification. What is the nature from the standpoint of pathogenesis of the various joint affections recognized as inflammatory. Are any of the socalled inflammatory lesions of joints of other than microbic origin. The micro organisms that have been demonstrated in joints. Are any of the joint affections due strictly speaking to metabolic disturbances, directly. The neuropathic joints, those associated directly with nervous diseases. The pulmonary osteo-arthropathies. Joint lesions that have been known to be associated with skin diseases, particularly psoriasis. The joints of angio-neurotic oedema.

What are the distinguishing features between the joint diseases known as the rheumatic ar-

thritides and the group known as arthritis deformans. The importance, to treatment, of establishing the etiology. The treatment of some of the more important joint lesions briefly considered.

SECTION TWO.

SURGERY, SURGICAL SPECIALTIES AND OBSTETRICS.

Chairman, Emerson M. Sutton, Peoria.
Secretary, Rudolph W. Holmes, Chicago.

Address—"Surgical Treatment of Gall-Bladder Diseases." Albert J. Ochsner, Chicago.

1. "A Case of Mastoid Operation Embracing Some Unusual Features." H. W. Chapman, Whitehall.

Mr. F. G., telephone lineman, aged 19 years referred to me by his attending physician May 12, 1902. At age of five years had scarlet fever, complicated with suppurative otitis media O. D. which latter has continued uninterruptedly to time of his first visit. Three months previously pain and swelling over mastoid right side which has continued to grow worse and was the cause of his visit. Operation on mastoid May 29, 1902.

Antrum 1½ c.m. back of and 2 c.m. above external auditory canal, and 3½ c.m. deep. After final removal of drainage tube, a permanent sinus, 7 m.m. in diameter, lined with epithelium from the integument, remains.

Water thrown with syringe into auditory canal issues from the sinus in a full stream, spurting out 7-8 c.m. Water thrown in same manner into sinus, issues from meatus in a similar stream. All discharge stopped, no pain or soreness since operation. Resumed occupation of climbing telephone poles one month after operation and has continued at it uninterruptedly ever since. P. A. A. D. 12-160.

2. "Differential Diagnosis Between Pseudo-Membranous Angina of Syphilis and Angina of Diphtheria." R. R. Campbell, Chicago.

Difficulties encountered. Treatment. Results.

3. "Remarks on and Reports of Additional Cases of Sigmoid Sinus Thrombosis from Middle Ear Suppuration." Norval H. Pierce, Chicago.

Symptoms of thrombosis of Sigmoid Sinus. Symptoms simulating Sinus thrombosis from mastoid softening with intact Sinus. Ultimate diagnosis of Sinus thrombosis. How shall we explore the Sinus and when. Before opening the Sinus shall we ligate the common jugular vein.

4. "Acute Infantile Middle Ear Suppuration." Willis O. Nance, Chicago.

Acute otitis media of infancy and early childhood frequently an unrecognized process. Recent investigations of Ponfick, Barth and others demonstrate that a large proportion of infants and young children at some time suffer from middle ear inflammation. Dangers from non-recognition.

Close relationship between acute purulent otitis media and acute infectious processes other than diphtheria and scarlet fever, e. g., gastrointestinal disturbances and bronchopneumonia.

Structural variations between the infant and adult middle ear, and the diverse characteristic manifestations of inflammation in each. Diagnosis and treatment of acute infantile otitis media.

5. "Infectious Ulcers of the Cornea." William H. Wilder, Chicago.

Underlying cause to be sought in impaired vitality of the tissues from a general or local depraved nutrition.

Active cause some trauma (sometimes apparently insignificant) supplemented by virulent infection.

The source of infection frequently in tear-sac. Character of infection.

Clinical appearances and dangers.

Importance of prompt recognition and active treatment. Prominent role of cauterization of the ulcer and constitutional measures in the treatment.

6. "Some Clinical Facts in Eye and Ear Work." J. B. Taylor, Bloomington.

(1) Experiences in use of compressed hot air in connection with vibration processes for deafness.

(2) Case of Iridodialysis.

Case of deep operation with magnet for penetrating steel in eye, without inflammatory reaction.

Case of proliferating retinitis hemorrhagica, both eyes. (All cases exhibited.)

7. "Brain and Visceral Syphilis from a Surgical Standpoint." William E. Schroeder.

8. "Cholecystitis." M. L. Harris, Chicago.

Influence of micro-organism in the etiology of cholecystitis. The great length of time microbes may remain active or retain their vitality in the gall blader. The diagnosis of cholecystitis and the great frequency with which it is mistaken for other conditions.

The advantage and necessity of drainage of the gall tracts in these cases and the length of time it should be continued.

9. "Gall Stones." J. L. Wiggins, E[illegible] St. Louis.

Past: Indefinite conclusions as to the causation factors of Gall Stones and their resulting

sequela, both immediate and remote. Most plausible and generally accepted theory being that they were of humoral origin, resulting from nutritive derangements, influenced by climate or environments. Treatment, medical, with object of, first, relieving blood of excess of those elements thought most favorable to Calculi formation; second, dissolving concretions already formed; third, aiding escape of Calculi through so called natural channels.

Present: Acceptance of the theory of infection as a necessary precedent of Cholelithiasis. Correctness of conclusions proven; first, by artificial infection; second, by clinical investigation. Former theories of conditions thought to be causation factor, now proven as only contributing factors. Treatment, operative; first, simple. Cholecystostomy; second, radical. Cholecystectomy. Operation not a matter of individual choice, but influenced by degree and extent of pathological involvement.

Future: No reason why the progress recorded in the past decade, in early recognition and operation for relief of Cholelithiasis, should not be continued so that the primary infection could be recognized in time to avoid pathological involvement not fully amendable to simple Gall-bladder drainage, thereby anticipating and aborting formation of concretions. Primary infection under present conditions not as obscure as terminal affections in the past.

10. "Kidney Surgery." Arthur D. Bevan, Chicago.

Brief historical review. Pathological conditions, warranting surgical interference. The means of diagnosis. Nephroraphy. Nephrotomy. Nephrolithotomy. Nephrectomy. Plastics on kidney and ureter. Prognosis after kidney operations.

11. "Report of a Case of Subcecal Hernia." A. E. Halstead, Chicago.

12. "Empyema." J. Herbert Franklin, Spring Valley.

Empyema. Anatomy. Attachments of Pleura. Etiology and Symptomatology briefly. Paracentesis. Thoracotomy. Thoracoplasty. Irrigation, Drainage, Adhesion.

13. "Liver Abscess following Typhoid Fever." S. M. Miller.

14. "Some Interesting Cases of Subcutaneous Injuries of the Abdominal Walls and Viscera." D. N. Eisendrath, Chicago.

The necessity for a more general knowledge of the subject by the practitioner as well as the surgeon.

Many lives might be saved by prompt recognition of serious injuries of the abdominal viscera in which there is only slight injury of the skin. Division of the abdominal organs into solid and hollow viscera. Greater amount of protection of certain organs. Manner in which injuries occur. Mode of examination for the purpose of making a diagnosis. Report of a number of cases. Statistics and deductions from same.

15. "Office Treatment of Fissure in Ano." J. R. Pennington, Chicago.

Outline: Definition and description. Some of the etiological factors and more important symptoms. Diagnosis. Treatment: Non-operative, operative. Divulsion of the external sphincter without the use of the ordinary general or local anesthetics.

16. "Appendicitis." S. C. Stremmel, Macomb.

A plea for early and interval operation. Interesting statistics. Summary.

17. "Pregnancy and Appendicitis." Chas. B. Reed, Chicago.

Reciprocal influence existing between the inflamed appendix and the "fruit sac." Disastrous consequences for the gestation and foetus. Mortality statistics of this condition as compared with other serious complications of pregnancy. Difficulties of diagnosis during pregnancy. Desirability of adopting a definite mode of procedure in these cases. The desirable objective of treatment. Radical treatment as a routine measure.

18. "Report of a Case of Intestinal Obstruction, With Remarks as to the Treatment Followed." J. F. Percy, Galesburg.

Details of a case operated upon. Insistence upon early operation. Best methods of treatment before consent for operation is obtained. The wisdom of temporizing operative methods in a case of intestinal obstruction where exhaustion is extreme.

Symposium on Eclampsia.

19. (a) "Etiology and Symptomatology of Eclampsia." Gustav Kolischer, Chicago.

(1) Definition; (2) differential diagnosis; (3) kidney in Eclampsia; (4) urine in Eclampsia; (5) pathologic findings in other organs; (6) infection theory; (7) foetal metabolism theory; (8) Veit's theory; (9) clinical symptoms; (10) prognosis.

(b) "Pathology of Eclampsia." Frank W. Lynch, Chicago.

(c) "Medical Treatment of Eclampsia." H. H. Whitten, Peoria.

1. Prophylactic. (a) Education for the doctor. Renewed realization of responsibility. (b) Education for the patient. Pregnant women should be taught the importance of early consulting the family physician. Pregnant women should be taught mental and physical hygiene, including food, exercise and dress. Pregnant women should be taught to watch carefully the eliminating functions. (c) Examination of the

urine at regular intervals. Treatment if albuminuria exists.

2. Treat in the attack. (a) Secure quiet and take measures to prevent self inflicted injuries. (b) Consideration of various drugs. Chloroform. Morphine. Veratrum viride. Chloral and Bromides. Diuretics and purgatives. Normal Salt Solution.

3. Treatment after the attack. Sedatives. Eliminative agents. Tonics.

(d) "Operative Delivery in Eclampsia." Charles S. Bacon, Chicago.

Before occurrence of convulsions, that is, in threatened eclampsia. Indication for operation. Maternal and fetal. Induction of labor. Least disturbing method should be chosen. Rupture of membranes in hydramnion, etc. Krause otherwise. Vaginal Caesarean section. Advantage in avoiding danger of long labor.

After occurrence of convulsions. Reasons for operating concern mother and child. Conditions necessary for operation. Good facilities. Value of hospitals in these cases. Contra indications to operation. Absence of facilities. All operations should be under anesthesia (ether). When cervix is completely dilated.

Forceps or other delivery operation. When cervix is effaced but only slightly or partially dilated. In hospital, deep incision and immediate extraction. In less favorable surroundings. Digital or bag dilatation followed by extraction. When cervix not effaced either at or before beginning of labor. In hospital, vaginal Caesarian section, description of operation. Where no hospital facilities. Induce labor and dilate slowly. Anesthetize, dilate with branched or solid dilator to admit one finger, rupture membranes, introduce Voorhees bag, withdraw anesthetic, after expulsion of bag anesthetize again and introduce bag, finally deliver.

During this time which may take several hours, prevent convulsions with morphine, sweat, purge, use salt solution and if necessary oxygen.

Discussion will be opened with an analysis of thirty cases—Jos. B. DeLee, Chicago.

Symposium on Carcinoma.

Special order Wednesday, 2 p. m.

20. (a) "Etiology and Pathology of Carcinoma." Gustav Futterer, Chicago.

(b) "Carcinoma of the Gastro-Intestinal Tract." J. B. Murphy, Chicago.

(c) "The Ultimate Results of Operation for Cancer of the Breast." David W. Graham, Chicago.

(d) "Cancer of the Uterus." E. Mammen, Bloomington.

Characteristics. Necessity and possibility of early recognition. Diagnosis. Touch, inspection. Microscope. When Lymphatics not involved. Treatment. Palliative. Radical. Hysterectomy. Vaginal. Advantage and safety of the procedure. Effect upon patient and results. Recurrence. Cases. Record in McLean County.

(e) "Geographical Disposition and Medical Treatment of Cancer." W. C. Bowers, Decatur.

The geographical distribution and the medical treatment of Cancer. Places of greatest prevalence. Places absent from. Real or apparent increase in certain localities. A few statistics. Treatment is according to whether recent chronic, superficial or deep, curable or incurable. Remedies for different phases and conditions of incurables.

(f) "The Starvation Treatment of Carcinoma." N. Senn, Chicago.

(g) "Further Investigation in X-Ray Therapy." Charles D. Center, Quincy.

A review of the cases reported to this society one year ago, with some additional ones used as illustrations.

The difficulty of telling before treatment whether benefit will follow application of rays or not. The re-iteration that more is claimed for the rays, therapeutically, than is justified; this claim arising from some apparently brilliant results which are not supported clinically by lapse of time.

An attempt to distinguish a type, or class, of persons easily burned by X-Rays.

21. "Indications for Surgical Intervention in Gastric Ulcer." A. F. Stewart, Oneida.

General considerations. Importance of early diagnosis. Hemoglobinaemia a constant symptom. Mechanical irritation of food. Under medical treatment prognosis dependent upon hemoglobin approximating the normal. Two prognoses in gastric ulcer. Relative indications for operation. Positive indications. Results following gastro enterostomy. Pylorectomy for tumor of pylorus. Conclusions.

22. "Some Practical Points in the Diagnosis and Treatment of Placenta Previa." Henry F. Lewis, Chicago.

Definition; marginal, partial and central. Main diagnostic point; hemorrhage during pregnancy; a dangerous sign and must never be passed over lightly. Signs by vaginal examination. Tamponade; pro and con; useful to gain time; In primipara nature may stop hemorrhage with head; less likely in multipara. Dilatation of os by balloon passed into uterine cavity; opened vessels thus pressed upon as far as placenta is separated. Podalic version; Braxton-Hicks version; latter not feasible in central placenta previa; too rapid extraction to be avoided after ether; danger of deep tears and rupture. Caesarean section; cases adapted for classical or vaginal operation. After care; postpartum hemorrhage; sepsis.

23. "Ante Natal Pathology." C. E. Paddock, Chicago.

There is a fetal pathology which has for its etiology certain factors which could have been prevented.

Every case of pregnancy should be considered as an abnormal condition, requiring the advice and attention of a physician. A neglect to do this often means injuries to the fetus.

The fetus suffers from a hereditary taint, notwithstanding the possibility of such a condition being known by the physician and one or both parents.

The treatment: (a) preventive. (b) curative.

Preventive. Advice against marriage by those known to be suffering from any pathologic condition which would have an injurious effect upon the fetus.

Curative. Strict attention to the hygiene of pregnancy and treatment of the fetus through the mother.

24. "Porro Operation: Carl Wagner's Modification." Carl Wagner, Chicago.

(1) The modification consists in reversing the course of the operation. (2) Description of a simple way of full control of haemorrhage. (3) Indications for the operation. (4) Report of three cases. Recovery.

25. "Symphsiotomy in Persistent Mento-Posterior Face Presentation, with a Report of a Case." E. B. Montgomery, Quincy.

With the greater success of the Caesarian operation in contracted pelves entailing a lessened mortality for both mother and child, the indications for symphysiotomy have become somewhat narrowed. In certain face presentation, however, in which in spite of all efforts at correction, the chin remains persistently in the hollow of the sacrum, a decided indication for the use of this operation is presented. Craniotomy is not indicated so long as the child lives. Caesarian section would be likely to be much more hazardous under circumstances such as are presented in an already somewhat prolonged labor. Symphysiotomy here commends itself as affording a chance to save the life of the child without entailing serious risk to the mother. In the author's judgment the lateral operation with the Gigli saw is best, not only on account of the ease of its performance, but on account of the lessened dangers from hemorrhage and sepsis and also on account of the speedier and more solid union of the separated parts.

Hammock suspension after the method described by Ayers in the Journal of the American Medical Association, vol. 38, page 645, and in the American Journal of Obstetrics, vol. 36, page 1, is not only more satisfactory, but indeed almost necessary in the after treatment of these patients.

The author was unable to find very much literature regarding the use of symphysiotomy in such cases, although all the text books on obstetrics express themselves favorable to its performance. The author gives an abstract of the report of seven such cases, made by Pinard in Paris in 1902 and detailed account of his own case follows which was successful as regards the mother although the child perished from asphyxia shortly after birth.

26. "The Value of Systematic Blood Examination in Gynecology." Palmer Findley, Chicago.

27. "Why Digital Exploration Through the Internal Inguinal Rings Should be Made in Conjunction with Every Alexander Operation." Albert Goldspohn, Chicago.

(1) The surgical risk is not appreciably increased by passing an index finger through the internal (subperitoneal) inguinal rings, palpating the internal parts and liberating them, if required, in cases where the active infectious elements have died out. Nor is any liability to hernia created thereby; (a) because no additional cutting is required, these rings being large enough to admit an index finger very readily with or without a little innocent stretching; (b) because nothing less than a modified Bassini hernia technique should be employed in closing all these wounds anyway.

(2) Obscure anatomical and pathologic peculiarities about the adnexae and ligaments of even the non-adherent retroverted uterus, are of frequent occurrence and they greatly curtail the degree or duration of the good results of the simple Alexander operation, because the latter does not discover nor rectify the conditions.

(3) Thorough bi-inguinal shortening of the round ligaments via their natural channels has no real rival in: (a) the completeness and solidity of its anatomical foundation, (b) its most nearly ideal physiological nature, (c) its harmlessness and the durability of its good results—beyond subsequent labors.

(4) A procedure that is pregnant with the most useful possibilities for very many simple and complicated cases of retroversion in fruitful women, should partake of the development common to surgery in general and not be confined to the narrow and primitive technique of decades past.

28. "Cystic Tumors of the Ovary." Geo. W. Newton, Chicago.

Synopsis: Histogenesis, etiology, symptoms. Importance of early and correct diagnosis, emphasized by illustrative case. Accidents to and changes in ovarian cysts. Results from conservative treatment of follicular.

29. "A Unique Case of Imperforate Hymen." Charles B. Horrell, Galesburg.

Case a fairly rugged, rather athletic girl nearly sixteen. Bicycle rider, etc., and healthy, one where naturally an imperforate hymen would not be suspected, suddenly exhibits abdominal tumor size of six months gravid uterus. Examination revealed "title" and incision released about two quarts of grumous

black blood and perfect relief. To be gained by report, do not forget that though rare may occasionally be found.

30. "A Phantom or Model for Illustrating Herniotomy and Suture Work on the Abdominal Parietes." E. Wyllys Andrews, Chicago.

Importance of layer by layer suturing in abdominal wounds. Difficulty of showing all steps of the closure to large audiences. Students get inadequate notions of the real care necessary. Herniotomy can hardly be shown to more than eight or ten observers. Value of cloth in layers to imitate abdominal fascia. Parts almost perfectly reproduced in large size. Authors' radical cure of hernia demonstrated.

31. "Immediate Abdominal Section." Denslow Lewis, Chicago.

The opinion is concurred in that increased facilities for surgical work and the multiplicity of hospitals in country districts often induce practitioners to undertake important abdominal operations without proper qualification or adequate experience. It is conceded that the usual post-graduate instruction may be a means of advertisement for the instructor rather than an honest attempt to teach the student-practitioner the details of operative technique. It is also admitted that many of those in attendance for a few weeks at our post-graduate schools only too often seek a superficial knowledge of recent advances and a respite from their every day work and but few are actuated by a sincere desire to add to their actual surgical capability.

Nevertheless it is urged that under certain conditions abdominal section must be undertaken by the practitioner in charge for without such intervention the patient's life is jeopardized and in some instances the result is inevitably fatal. The principles of asepsis are simple and easily applied anywhere. The desirability of special skill and suitable surroundings become insignificant when the danger to life is imminent.

The author cites cases from his recent experience in ectopic gestation, appendicitis, obstruction of the bowels and other conditions where the demonstration has been made that immediate operation alone can save life.

32. "The Superior Sphincter of the Rectum." Robert Colyer Bourland, Rockford.

At least one permanent valvular projection is present in the internal wall of every normal human rectum, from 5 to 8 centimetres above the anus. As a rule it is located upon the posterior and right lateral wall of the gut.

It is extremely variable in size and occasionally presents a spiral arrangement.

Histologically the value consists of a fold of mucous membrane, enclosing muscularis mucosa, a thickened sub-mucosa and a thickened mass of circular muscle fibres, which mass constitutes the characteristic feature of the valve, and is an imperfect expression of a third sphincter of the rectum.

This structure is probably without function, except in cases necessitating the division of the external and internal sphincters ani. When it may become hypertrophied and exercise a definite sphincter action.

Pathologically, an hypertrophied rectal valve may act as a mechanical obstruction to the passage of faeces, may become ulcerated and is sometimes the seat of malignant growths.

33. "Use and Abuse of Drainage." J. N. Stealy, Freeport.

The purposes of drainage. The indications and advantages, as against the disadvantages and bad results of drainage. The present day inclination for less drainage. Is it justified? Conclusions.

PRELIMINARY MEETING.

According to the provisions of Chapter 9, Section 4, of the By-Laws of the Illinois State Medical Society, a preliminary meeting of members of the Society is called for 3 P. M. on Monday, May 15th, at the Illinois Hotel, in Bloomington.

This meeting is for the purpose of discussing all matters of Public Policy and any questions which are of interest or importance to the profession or the Society. The By-Law reads as follows:

"The Committee on Public Policy * * shall call a preliminary meeting of the members of the Society for the discussion of such subjects which may be presented, and shall report the recommendations of such meeting to the House of Delegates at its first meeting."

P. M. Woodworth, Chairman,
L. C. Taylor,
H. C. Mitchell,
Carl E. Black, Ex-Officio,
E. W. Weis, E-Officio.

TO MEMBERS.

The Passenger Associations have granted a special rate of one and one-third fare for the round trip to Bloomington for ALL persons attending the meeting. This special rate can be obtained ONLY by presenting a CERTIFICATE from the local ticket agent and having it certified at the Secretary's office at the meeting and signed by the railroad joint agent. Do not fail to ask for your certificates.

The Illinois Medical Journal.

The Official Organ of the State Medical Society.

MAY, 1904.

NEXT ANNUAL SESSION, BLOOMINGTON, MAY 17, 18, 19, 1904.

OFFICERS:

PRESIDENT—CARL E. BLACK, Jacksonville.
SECRETARY—EDMUND W. WEIS, Ottawa. TREASURER—EVERETT J. BROWN, Decatur
EDITOR—GEORGE N. KREIDER, Springfield.
ADVERTISING MANAGER—MR. LOUIS O. EDDY, Marshall Field Building, Chicago.

SECTION ONE.

Practice of Medicine, Medical Specialties, Materia Medica, Therapeutics, Etiology, Pathology, Hygiene, State Medicine and Medical Jurisprudence.

J. W. Pettit.....Chairman
Ottawa.
E. B. Montgomery....Secretary
Quincy.

SECTION TWO.

Surgery, Surgical Specialties, and Obstetrics.

E. M. Sutton .....Chairman
Peoria.
R. W. Holmes .....Secretary
387 N. State St., Chicago.

Committee on Public Policy and Legislation.

P. M. Woodworth .....Chicago
L. C. Taylor .....Springfield
H. C. Mitchell .....Carbondale
The Pres. and Sec'y, Ex-Officio.

Committee on Scientific Work.

J. W. Pettit, Ottawa.
E. M. Sutton, Peoria.
The Pres. and Sec'y, Ex-Officio.

The figures before the names of the Councilors refer to the Councilor Districts.

The Council.

Term Expires 1904.

(2) W. O. Ensign, Rutland.
(6) L. J. Harvey, Griggsville.
(9) J. C. Sullivan, Cairo.

Term Expires 1905.

(8) H. C. Fairbrother, E. St. Louis.
(5) W. K. Newcomb, Champaign.
(3) J. F. Percy, Galesburg.

Term Expires 1906.

(7) C. Barlow, Robinson.
(1) M. L. Harris, Chicago.
(4) O. B. Will, Peoria.
The Pres. and Sec'y. Ex-Officio.

THE FIFTY-FOURTH ANNUAL MEETING.

On pages 914 to 921 will be found the Order of Proceedings and Section Programs of the 54th annual meeting to be held at Bloomington, May 17, 18, 19. It will also be noticed that the usual preliminary meeting will be held on Monday the 16th instant. A glance at the program will reveal the fact that a program of unusual merit has been prepared. In medicine the address will be given by that silver tongued orator, Wm. E. Quine. In surgery the address will be given by that tireless worker and experienced operator, Albert J. Ochsner. Besides an unusual number of good papers, there will be symposia on Tuberculosis, Eclampsia and Carcinoma, three of the live questions concerning the world of medicine and affecting the general public more than any other. We trust a large number of members will take advantage of the opportunity to hear a splendid program and at the same time visit one of the beautiful cities of the Prairie State.

ROBERT KOCH.

In 1882 announced the discovery of the bacillus tuberculosis. Klenke, Villemin, Cohnheim and Salomonsen had made important investigations before, but had not unlocked the secret.

Koch took tubercles from the lungs of animals, recently dead of the disease, crushed them on cover glasses and subjected them to all staining materials known to him in a vain endeavor to see the germ. Finally, by the aid of an alkaline solution of methylene blue, he succeeded in finding the fine blue threads. It was while endeavoring to make these threads clearer by a differential color reaction with Vesuvin that he found that the previously blue colored cell nuclei and other contents of the field had taken on

a brown color while the threads still retained the beautiful blue stain and could by this means be readily found in every specimen of tuberculous material.

The next problem was to secure this substance in a pure culture, free from any contact with bodily tissues. This problem Koch solved after endless care and patience, by the help of a new culture material.

The third step to cause the disease by vaccination of the pure culture of the germ, was now an easy task.

The splendid study was complete; not an item had been omitted and the discovery was announced at a meeting of the Physiological Society on the 24th of March, 1882. What a sensation was caused when it became known to the world that the most deadly of all diseases was infectious and that its cause had been discovered. Here was furnished the prospect of combatting the deadly enemy. Koch took up the task with energy, but was obliged to give it up. Cholera had appeared at the door of Europe. Every eye was turned to Koch for help and not in vain. Koch left the comforts of home and with his helpers journeyed promptly and without fear to Egypt and later to India, the home of the disease, and there succeeded in discovering the cholera germ to be a lively moving screw formed bacillus which when dried on the cover glass appeared like a comma, the so-called comma bacillus. His studies showed that the sick individual is the carrier, manufacturer and spreader of the germ. The result of Koch's discovery has been that Europe and America have been practically free of the Asiatic disease ever since. It is feared but little more than small pox.

As soon as possible Koch returned to the study of tuberculosis. He found that the bacillus could only propagate in a high temperature. It is absolutely necessary to disinfect the se and excretions of men and animals afflicted with the disease. Naturally it was best to endeavor to destroy the germ inside the body affected. After years of indefatigable study Koch announced that he had discovered in Tuberculin—the filtrate of cultures of tubercle bacilli in glycerin bouillon—an effective substance with which the early stages of the disease might be detected and even cured. This announcement was received by the profession and laity with unexampled enthusiasm. Koch's remedy was "boomed" by the papers in its usual extraordinary way. Patients in the last stages of consumption came expecting to be restored to health in a few doses of the wonderful remedy. Of course Koch had not said this, but when results were not obtained as expected, he suffered the penalty instead of these foolish friends, and from being the honored discoverer he became a much abused "quack" not only abroad, but in his own home, and still he only told the truth—a truth which still remains, viz—that tuberculin has proven itself the best means for diagnosing tuberculosis in its first stages. It has also been proven effective for healing tuberculosis in its beginning when used by careful physicians.

Koch, by the persecutions, was only stimulated to more activity. By long trituration in an agate mortar he pulverized the germs to the finest possible degree and this substance when dissolved in an isotonic salt solution, became a new Tuberculin, the so-called T. R. which possessed all the virtues of the old and something else. What that something else is has not yet been determined. It is evident, however, that the problem has not yet been solved along that line.

However, the value of Koch's studies on Tuberculosis does not depend on his finding an antidote. His other work has given the

key to successful combat against the great white plague. More time will be required, but the hygienic and sanitary reforms necessary to eliminate Tuberculosis will assist in eradicating other diseases at the same time. So rapidly is the death rate from Tuberculosis decreasing in Prussia that it is believed that by 1927 it will disappear from the list of diseases. What Prussia is doing other countries can and will do. The Illinois State Medical Society will have much to do with bringing this about in America.

THE TRUTH ABOUT SMEJKAL.

In the April issue of this Journal, pages 847-856, will be found a very interesting and enlightening discussion on the subject of "Graft" which took place at the February meeting of the Physician's Club of Chicago. To those members of the State Medical Society who re-call the circumstances of the defeat of the bill introduced into the 43rd General Assembly by the Legislative Committee the remarks of Mr. Darrow and Dr. G. W. Webster will be especially entertaining. A reference to that part of the discussion will show that Mr. Darrow asked Dr. Webster the following question. Isn't Mr. Smejkal, who was a member of the Judiciary Committee of the house, the attorney for the State Board (of Health)? To this Dr. Webster replied. No sir, Smejkal has nothing to do with the Board. He is not and has not been for a long time. Mr. Darrow then retorted. When the Legislature met he informed us he was. Dr. Webster finally replied he *was* formerly attorney for the Board, but *was not at the time of the meeting of the General Assembly.*

As Mr. Edward J. Smejkal resides in the same district with Mr. Clarence Darrow it is probable that Mr. Darrow had accurate information as to the employment of his colleague. From the report of the Legislative voters League we take the following extract regarding Mr. Smejkal which would seem to indicate that while that gentleman may not have been entitled to the appellation of attorney of the State Board of Health, yet he did hold or does hold such close relations with the Board that he was probably correct in announcing himself and Mr. Darrow was correct in believing him an attorney for the State Board of Health. Certainly Mr. Smejkal's active opposition to the bill would lead one to believe that some powerful influence was lending encouragement to his efforts.

Copy of Report of Legislative Voters League.

Edward J. Smejkal (rep.), on pay roll of state board of health, resides 77 Bunker street; voted against bad amendments to civil service bill, except the one to omit certain officers from its operation; is not recorded as voting on Powers' amendment to city law; was active supporter of lawless house organization and fought enabling act, but finally voted for it when its passage was certain, and for charter amendment; opposed adding to investigating committee; introduced and pushed bill to allow "floaters" to become judges of election; an unsatisfactory record.—Chicago Tribune, April 11, 1904.

GOVERNOR YATES AND THE MEDICAL PROFESSION.

Governor Yates has apparently discovered that he is not popular with the medical profession. We believe he has misconceived the reason for this unpopularity and supposes that it is wholly due to his attitude on the bill creating a board of medical examiners which failed to pass at the last session of the general assembly. In this misconception

he shows the instinct of a politician and fails to appreciate the fact that his attitude on the above mentioned bill is only one example of the many errors he has committed in matters having reference to the learned professions.

To offset this unpopularity he has caused some one to issue a 24 page pamphlet entitled the Veto Messages of Governor Richard Yates affecting certain bills enacted by the Forty-third General Assembly of Illinois, 1903, viz. The Dental Bill. The Nurses Bill. The Embalmer's Bill. Who the some one issuing the pamphlet is could not be discovered from the pamphlet itself for it bears no date and there is no indication as to where it was printed nor by whose authority it was distributed. However it would not be difficult to trace the source of the circular. The industrious but overworked secretary of the State Board of Health probably composed the "Introductory," an adjective erroneously used here in place of a noun. The same cunning hand probably inserted the often misleading foot notes which appear on pages 4, 5, 21 and 23.

Concerning the vetoes themselves it is unnecessary for us to speak since this whole matter was fully considered in the issue of the Journal of June 1903. The apparent attitude of the Governor and the Secretary and President of the State Board of Health was there fully discussed and the falsity of the premises upon which they appeared to have acted was fully shown. Subsequent events have gone a long way towards proving the truth of the statements there made. It will be well here however to acknowledge that an unintentional misquotation was made in that editorial. Quoting from several daily papers regarding the nurses bill we stated that the executive says. "Section 12 inserted by the State Board of Health is so unwholesome that its necessity as an exemption is apparent to all." It is now claimed that the language of the veto was *wholesome* and not unwholesome. If an error was made we greatly regret it especially as it was and is unnecessary to say anything but the truth concerning the persons concerned.

We use the words apparent attitude of the Governor, advisedly because from the time he recommended, in his message to the 43d General Assembly, the passage of a law creating a Board of Medical Examiners it has been at all times a question as to just what has been the attitude of the Governor in this matter. The Governor told Chairman Black of the Legislative Committee that he was in favor of the Medical Examiner's Bill, would be glad to see it pass and would sign it if passed. Secretary Egan and President Webster claiming to be the spokesmen of the chief executive would as positively assert within the same 24 hours that the Governor was not in favor of the bill and would not sign it if passed. The "introductory" leaves us still further in doubt since diametrically opposite statements appear therein.

We regret that our space will not permit us to review all the interesting items which appear in this remarkable pamphlet. Its issuance is a great compliment to the medical profession since it is an acknowledgement of the power and influence of a large and respectable body of men who must now and in the future be reckoned with.

We regret also that space now also prevents us from giving some of the real reasons which have alienated the medical profession from the present chief executive. This we hope may be done in some future issue of the Journal.

Correspondence.

JACKSONVILLE, ILL., April 20, 1904.
Editor of the Illinois Medical Journal,
Springfield, Ill.

Dear Sir: I have read with interest the various articles appearing in the Journal on "The Needs of the State Institutions in Illinois," and I have read carefully the article written by Mr. J. Mack Tanner, Secretary of the Board of State Commissioners of Public Charities.

While I think it was perfectly proper and desirable to publish the article written by Mr. Tanner, notwithstanding its somewhat unreasonable insinuations upon the Journal of the State Society and the Society itself, these questions are very proper ones for discussion. At the same time I doubt very much whether the subjects can be discussed by laymen so as to be of much value to the medical profession.

The care and treatment of the insane is entirely a subject for the medical profession, and it certainly creates a smile when laymen assume to discuss such subjects as the desirability of internes, and competitive examinations for the sane; the advisability of women physicians in each hospital; the necessity or desirability of trained pathologists in connection with the state institutions; whether or not it is better to have male or female nurses in charge of male patients, etc., etc.

It creates a smile when laymen assume to discuss and settle problems which are purely medical. In fact I never could understand what the State Board of Charities could possibly do in connection with our state institutions any more than to see that cruelties were not practiced in care of patients, and possible to see that the funds of the institutions were properly used. Even in these matters the judgment and oversight of the Board of Trustees, Superintendent and assistant physicians, with their annual report to the governor of the state, is a far more reliable safe-guard to the patients than any committee traveling about the state, dropping in here and there just to look things over.

Things might be improved by having only one Board of Trustees for all institutions. This however is an open question.

The sooner the physicians of Illinois assume their true position in connection with all these matters the better it will be for our State. These are entirely medical problems, and can only be fully understood and appreciated by members of the medical profession. Much more could be accomplished by the appointment of suitable committees by our State medical associations to visit the state institutions and report back each year to the various state societies upon their condition and management. In addition our Societies should invite reports from the superintendents.

Something should be done to bring these state institutions into closer relations with the medical profession of the State. These are questions which our State Society can appropriately consider, and in which they can render the State invaluable service by assuming closer relations with the various state institutions, and by taking a more active interest in this important work. Insane patients are simply sick. They all first consult their family physician, and upon his advice are committed to an institution especially designed for them, where they are at once under the care of other physicians. Our profession needs to be brought closer to this work and to give more active support to the various superintendents in their work. Provision should be made for the better training of medical students and graduates in the subject of insanity and the care of the insane. One thing much needed is a more active and thoughtful interest and support of these institutions by the members of our profession.

Very respectfully,
Carl E. Black.

GALESBURG, ILL., April 18, 1904.
To the Editor:

I have gone over the matter of the editorials referred to in your recent communication, together with the letter of Mr. J. Mack Tanner in reply thereto. I see nothing in the editorials that is not in every way to be commended; and on the other hand,

I see no reason why the comments thereon by the Secretary of the Board of Public Charities should not have been published.

The editorials are a plea for this State to get in line, or ahead of the line, in the management of its state institutions. The letter of Mr. Tanner is a statement to the effect that no improvement is necessary. His covert suggestion that he does "not understand the purpose of the editor of the Illinois Medical Journal, or his sudden interest in the charitable institutions" must be interpreted in the light of the well known sensitiveness of all of the present state officials to criticism. But little, if any, attention need be paid to it. All that any of us want for our state institutions, including Mr. Tanner, is better results; and the subject is so big that it is not necessary to throw mud or answer in kind.

The letter of Mr. Tanner is a subtle production. It is evident that he seeks to thwart further full discussion, by using the names of those physicians at present in the employ of the state. We all know that some of these men are all right, and we also know that others are utterly incompetent, except as politicians. But unfortunately there is not enough leaven to permeate the mass.

Again, Mr. Tanner assumes that the methods suggested in the editorials for the improvement of the service in our state institutions, has in the past had a full and fair trial. We all know that no method that had in it even the hope of permanent good results (in all that that implies) for our state institutions, has ever had a fair trial. It seems to me that so much can be said against the whole present (lack of) system in answer to Mr. Tanner's letter, that nothing but good can come from it. My own idea would be to give Mr. Tanner's views the widest circulation and then write a comprehensive editorial actually showing up things as they are, with suggestions for their improvement.

I can readily understand why Mr. Tanner does not want "to make the fifty thousand relatives and one hundred thousand friends of the ten thousand inmates of these institutions, believe that the inmates were deprived of the treatment and care due them, and that the administration was responsible therefore." But to cry "peace, peace" when there is no peace, is neither good for the state board of charities, nor for us.

I can readily understand how Mr. Tanner can honestly believe that everything in our state institutions is just as it should be. He has had no training in the work for which he is engaged, and if we can help teach him, only good can come from it if he is to retain his present position.

Trusting that I may have added a little in the way of suggestion on the questions considered,

I remain, sincerely yours,

J. F. Percy.

OTTAWA, ILL., April 20, 1904.

My dear Doctor:

I have just read the Tanner letter and hasten to give my opinion on the questions at issue.

I see nothing in Tanner's letter that is objectionable. First, because it is in a measure an apology for the existing state of affairs, and second it in detail admits the contention or contentions of Miss Lathrop. His personal conclusion does not affect the general subject, and his criticisms of the opinions of Miss Lathrop are his own and are worth only as much as they may influence others, but I do not believe these opinions will carry any weight whatever with medical men. I am also in favor of the full and free discussion of medical topics with the laity, and I cannot see any harm that can possibly result from the publication of this letter; but on the contrary a great deal of good may come from the concentration of opinion of those medical men who are interested in this subject urging them to a greater exertion for the corrections of evils existing. This is just the point that we are striving for in our society work, and I believe that this subject should be given all the prominence it deserves. The fact that the Tribune has commented upon this editorial shows that an impression has been made, and as you know the people must be educated before expecting any departure from the ordinary, and this surely ought to

prove good schooling. I believe, Doctor, that you can handle this subject without fear of any unjust criticism from the Society, because you are in a position to deal with it from the standpoint of a critic or spectator; as you have given the required credit to Miss Lathrop, and she is a woman I know who is well able to take care of herself. I believe this entire matter should be left to the wisdom of the legislature urging them and insisting upon a commission, but whether sufficient pressure can be made in the next decade is a question that is problematical. But you know what our method has been, that in spite of defeat to keep hammering away just the same in the matter of education and we can be proud of the successes we have attained.

I am inclined to think that the majority of the Councilors will agree with me although at the present time they may hesitate in the view of the difficulties we have experienced in our work with the State Board of Health. The pendulum may perhaps swing too far to the conservative side, but I am sure that the impressions held on all the articles in question, as well as the letter will finally force them to the conclusion that no harm can result but much benefit will follow the publication of this letter. I say let the good work go on. It makes good reading matter, it stirs up an interest, it puts both sides on their metal and perhaps "Manchuria may retain its administrative entity."

Yours sincerely,

E. W. Weis.

OTTAWA, ILL., April 20, 1904.

My Dear Kreider:

Secretary Tanner seeks to dodge the main issue by discussing a question of minor importance, viz.: the advisability of appointment of internes. Taking the narrow view of advantage to the particular institution in which interne serves, there is some reason for his position. Taking the broader view that the knowledge thus gained is of value to the body politic, his argument falls to the ground. In view of more glaring defects in the present system, the discussion of this question, or the ability of those in charge, is too trifling to occupy your time or space.

Here are a few facts which I know to be true and are the basis of the evils complained of.

The trustees and superintendents while nominally in control are not in fact. The law says the trustees shall appoint Supt. As a matter of fact the Governor makes the appointment not only of the Supt. but every other official whose place is worth anything. He does not even make the appointment according to his own judgment, but at the dictation of his political henchmen who know nothing and care less for the real interests or purposes of the institution. Every employe from Supt. down, knows that his term of office depends upon his political activity and usefulness and when these are at an end he is either asked to resign or made so uncomfortable he does not care to remain. I know whereof I affirm when I say that the trustees are mere figureheads and except in carrying out the details of the work of their respective institutions the Superintendents are also. Herein is the main difficulty and the basis of the whole evil—the officials are appointed because of their political influence and more especially because of their interest in and activity for the Governor to whom they owe their appointment. They are thus forced to pay more attention to politics to retain their positions than in performing well their duties to the State. How does it come that heads of institutions are just now engaged in active political work in securing the nomination of Gov. Yates, if not to hold their positions? Does anybody who has been a close observer believe that any of them could hold their positions if they failed in this particular, or could be ousted however, incompetent, if Gov. Yates is renominated? The facts are the whole system is wrong and will be until established on the firm basis of civil service.

Keep up the fight and don't let them sidetrack you by getting away from the main issue. By all means publish letter, but don't fail to show that there is nothing to it but chaff, and either emanates from one who cannot rise to the importance of the situation

or if he does is trying to cover up the real issue under a multitude of words. Be sure and let your editorial accompany Secretary Tanner's letter, so that the emptiness and insincerity of it may be brought into stronger contrast with your position which is absolutely correct. You can say with truth, "let the galled jade wince, my withers are unwrung." You are making the Journal a power for good by discussing live practical questions. Go on and don't let up because once in awhile you may get a return blow. All aggressive men must expect that.

Let us keep clearly in mind that those now responsible for the conduct of our charitable institutions are, like the patients and public, the victims of a vicious spoils system. They are powerless to change the system. This can be done by a healthy public sentiment which is rapidly forming and will soon make itself felt. The present officials are not wholly responsible for the system. They are only culpable for defending it.

Yours truly,

J. W. Pettit.

PEORIA, ILL., April 20, 1904.

To the Editor:

I have re-read with critical care the articles in the Journal, as well as that of Mr. Tanner. Respecting the former, I can only say that while exception might be taken to delegating the formulation of professional opinion to a non-professional, the fact remains that the articles referred to probable reflect with as great accuracy as any could the position of the profession generally respecting the features of the subject of which they treat. Certainly the sentiments therein expressed agree with my own, and with those of my acquaintances in so far as I have been able to ascertain.

I must confess that I cannot see in the editorials any cause for grievance. They contain a plain, frank, non-partisan view of the situation. But, since Mr. Tanner feels that there is call for his statements, and since they contain nothing objectionable, I should certainly publish them in order to throw on the subject all the light possible, and as an evidence of good will. While the former articles seem to represent the concensus of professional observation and thought, we should be always glad to have errors of either fact or judgment pointed out, and to that end welcome all succinct statements having such bearing. Our object should be to arrive at the truth respecting matters of Institutional conduct, and especially those phases having so close a relation to professional honor and success. Our object should be to place responsibility where it legitimately belongs, and aid all expedient methods for betterment. I hope in the near future to have something more specific to communicate on this topic.

Fraternally and sincerely yours,

O. B. Will.

ONE HEAD TO AN INSTITUTION.

ANNA, ILL., April 13, 1904.

To the Editor:

So long as politics plays the star part in the management of the State Institutions there cannot be the highest standard of efficiency. When I say this I do not mean to reflect in any way upon the gentlemen named in Mr. Tanner's article. I know several of them personally and have the highest regard for them. But no matter how wise and efficient one may be he cannot succeed in any undertaking when he is handicapped by outside interference.

In conducting a hospital the Superintendent cannot do the actual work; he can only direct affairs. Consequently he must depend upon a large force of subordinates; and when these subordinates are appointed because the Governor or a member of the Legislature or a Trustee or someone else wishes to pay a political debt or strengthen his political fences, then the matter passes entirely out of the hands of the Superintendent, and many times he has to put up with employes he wouldn't consider for a moment if he were conducting a private enterprise.

Mr. Tanner says he believes there should be but one head to an institution. I agree with him.

The Superintendent should be appointed because of his fitness; his knowledge of the

work, his honesty and integrity. Then he should be allowed to choose his medical staff and the heads of departments and subordinates. He should be entirely let alone from any outside interference. He is on the ground. He knows what is best to do. If he doesn't know he never should have been appointed.

But under the present system there are a score or more heads instead of one directing the affairs of an institution. The Governor says who shall compose the medical staff and fill other important positions, while the Senators and Representatives and Trustees and "Bosses" say who shall have the other places. Hence the Superintendent has very little to say about it, and whether the material sent him to assist him in the care of the unfortunates is good, bad or indifferent he has to put up with them as long as he can. It does not matter whether this system conflicts with his ideas of good management and economy or not; that is not the point.

Who gets the worst of it in the end? The patients.

Samuel Dodds.

CHICAGO, ILL., April 17, 1904.

To the Editor:

I have just looked over letter and have made a marginal note or two. Evidently somebody feels himself hard hit. I involuntarily smiled over the statement that the writer did not understand the purpose of the editor and of the Illinois Medical Journal, or his sudden interest in the charitable institutions. Surely it has been obvious to many others, as it has to me, that politicians not only have no unselfish interest in the charitable institutions of the State, but are entirely unable to comprehend the existence of such interest in others.

The statement of Mr. Tanner concerning the internes is full of inaccuracies, which I shall not now take time to point out. I was Secretary of the first Examining Board which was organized by the State Board of Charities under the authority of Governor Altgeld. Dr. Boerne Bettman, then President of the State Board of Charities, was particularly active in the movement, receiving every assistance from Miss Julia Lathrop, at that time, I believe, Secretary of the Board.

Very sincerely yours,

H. T. Patrick.

CHICAGO, ILL., March 15, 1904.

To the Editor:

I have read the communication from the office of the Board of State Commissioners of Public Charities and am pleased that this communication of the Secretary has been published. I do not know myself any way we can, with the present state of public sentiment, secure a non-partisan administration of our Public Institutions. If Yates is re-nominated and re-elected, I have no doubt the present condition of things will be continued. I am sorry that I do not see any way of correcting it at this time.

Yours very truly,

D. R. Brower.

State Items.

Dr. W. Jay McClintock of Illiopolis has located in Springfield.

Dr. Jennie Shipp left Petersburg recently for Oklahoma and intends to take up her permanent residence there.

Dr. Henry J. Burwash, 721 N. Hoyne ave., Chicago, was sued by Mrs. Eliza Jessen to recover $10,000 she alleging that a post-mortem examination was made without her consent upon the body of her son, August Jessen, who died in St. Mary of Nazareth hospital.

The local Board of Health of Carlsruhe, Germany has issued a warning, printed in the daily press, warning the citizens against the "Interstate Department of Health" in Chicago, which is sending circulars claiming to cure all the diseases in the calendar. Treatment is by letter and with medicine, only costs from six to twelve dollars.

Grown Careful.

An Atchison man once recommended a doctor to a sick friend. The sick friend died, and his widow sued the Atchison man for damages. The Atchison man is not recommending any doctors now.—Atchison Globe.

Big Judgments for Personal Injuries.

Three judgments for personal injuries were sustained by the Appellate court. In one, the Illinois Central company is directed to pay James F. Swift, a carpenter, $20,000. He was injured when a piledriver fell over in construc-

tion of a railway bridge across the Illinois river at LaSalle seven years ago.

The United States Brewing company was directed to pay $5,000 to Henry N. Stoltenberg, as administrator, for the killing of John F. McHale, 4 years old, run over by a brewery wagon at Leavitt and Huron streets in 1901.

A judgment for $10,000, obtained by Charles La Pointe, a sign painter, against the Gunning system, was sustained. He fell while at work in 1901 and alleged he was not properly safeguarded.

For the loss of an arm a jury in Judge Walker's court has awarded John Marinan, a switchman against the Chicago and Northwestern railway, damages of $6,800. Marinan fell in front of an engine at Mayfair in 1900.

Peter Cerovitch of South Chicago, who says he contracted "miner's asthma," in an explosion of dust in a coal mine at Pawnee, Ill., in 1902, has sued the Victor Coal company to recover $20,000.

County and District Societies.

WINNEBAGO COUNTY MEDICAL SOCIETY.

Regular meetings are held in Rockford on the second Tuesday of each month. Membership 56

Officers.

President .....W. B. Helm, Rockford
Secretary ..... C. S. Winn, Rockford
Member Com. on Legislation....D. Lichty, Rockford

At a meeting of the Winnebago County Medical Society held at Rockford April 12, 1904, the following paper was read by Russell Broughton, M. D., of Rockford:

Alcohol as a Toxic Drug.

Twenty-five cents will buy at a drug or grocery store, a package of herbs with printed directions, to make an infusion, with five gallons of water, to which add four pounds of sugar and a small amount of yeast; strain and bottle while hot, cork securely, and keep in a temperature of about seventy degrees for three or four days, then place on ice. The root or herb beer is then ready for use, and is, a three and one-third per cent alcoholic liquid.

When thus prepared, the liquid contains, in addition to the alcohol, any soluble matter in the material used, that does not take part in the fermenting process, this gives the drink flavor, or it may medicate it, but it has nothing to do with the production of the per cent of alcohol; any more than would a page from a book on Natural History or a handful of hay.

This method of preparing fermented alcoholic drinks, dates back to earliest history. The safety in the use of them, is in proportion to the innocence of the material used, other than sugar, starch, and water, and the small amount of alcohol, they contain. This varies from three to fifteen per cent; while distilled liquors, such as brandy, whiskey, etc., have a general average of about fifty per cent.

Distillation was unknown to the ancients. It is recorded, that they were large consumers of fermented drinks, which were then, as they are now, used as a part of religious ceremony.

The foundation of scientific physiology was laid about fifty years ago, when Professor Huxley and his co-workers made their study of the function of cells, and not much was done previous to 1855, in the scientific research of organic and chemical physiological science.

Great progress has been made since then. Alcohol has played a very important part in chemical research, and does yet. The great demand for its use in various ways, calls for improved methods for its production. Ethyl Alcohol, from grain distillation, is a most important and useful one in domestic use, and the only one to be considered at present. Other forms were unknown until about 1828. Since then, about one hundred and forty kinds have been discovered and demonstrated.

Oxygen, hydrogen, and carbon, in the proportion of C_2, H_5, HO; constitute alcohol. It is well in this place to note that alcohol contains no Nitrogen.

The natural sources of alcohol are starch and sugar. They exist in various plants. If alcohol is pure, it is the same from whatever source it is derived.

Government tax was paid on 104,804,651 gallons of distilled liquors in 1902, and on 44,478,832 barrels or 1,401,103,208 gallons of fermented liquors during the same year.

Eighty-eight per cent of all Ethyl alcohol is swallowed by men. It passes with little chemical change, to form a part of the blood current, and is distributed rapidly to all parts of the body that are influenced by nutrition.

The general effect when brought in contact with healthy or physiological tissue, is to render the same abnormal or pathological. The first effect is irritation, producing molecular activity, increasing surface temperature with a feeling of surface warmth, followed by a loss of heat and motion, oppression, stagnation, exhaustion and auto-intoxication.

Alcohol is toxic to normal tissue. It interferes with metabolism and nutrition, first increasing, and then lessening, tissue change.

The small amount swallowed in the mildest wines or other fermented drinks, is just as disastrous proportionately, as a larger amount taken in distilled liquors.

The most important and characteristic pathological action of alcohol, is that of a cellular poison.

Alcohol, being a product of death and disintegration, is not normal to living tissue. Fermentation is the work of micro-organisms called bacteria, and can be divided into two

groups: one maintains life, the other produces death and dissolution into original elements.

Alcoholic fermentation belongs to the latter group, because it can not be obtained from any living organism, substance, or chemical compound containing life. Death and decay being necessary preconditions for its production.

Since there is no line of demarkation between the traditional, so-called, innocent, beneficial effects of alcohol, when taken into the body, on the one hand, and the very bad and visible effects in the continuous use of it, on the other, one can only conclude for its non use at all times, except it be for a condition caused by a previously used toxic, or for toxine poisoning.

With little or no thought that a drinking man might be an ill one, good men and women have been praying in vain for him during the last half century, in every civilized community, and during that time one-half of all arrests have been for drunkenness.

The method of arrest is not the mild and easy one, such as is employed in apprehending the bank wrecker, bigamist, or the man who burns his store for the insurance. When narcotized by the powerful poison, alcohol, the unfortunate man may be clubbed into insensibility, bundled roughly into a wagon, and carted to jail to occupy the poorest of its accomodations, often without heat, or bed, with little or no attention, until the effects of alcohol are sufficiently passed to enable him to appear at the bar of a justice. With no defense, too ill to make one, he, in a dazed condition, helplessly accepts the situation and fine, enduring his suffering in defiant silence.

Were another man equally ill from fever or any other cause, he would be carefully conveyed to his home, or to a hospital, physicians summoned, trained nurses employed, and the sympathetic public would anxiously read about his case in the daily papers.

Evidence that it produces disease, is constantly before us. Nearly all families suffer from it. One-tenth of all the deaths in this country, are remotely or directly caused or hastened by its poisonous effects.

Surgeons expect twenty-five per cent better results in operations on non drinkers.

Eighty per cent of all moderately hard drinkers who have pneumonia, die during the first week of illness.

A very large per cent of children born to inebriate women, survive not more than a few days. If the woman be a constant and hard drinker during pregnancy, the child is poisoned by alcohol, and is born a drunkard. This condition of affairs is no argument to advance that drunkenness is hereditary; it is not. Twenty-three per cent of drunkards are children of non drinking parents.

Man to be just must be generous to the unfortunate.

Disease is a morbid physical condition, a deviation from health, or the normal condition of any function or tissue of the body, and it is caused by traumatism, toxines, (parasites) or toxics, such as arsenic, quinine, opium, alcohol, etc.

Medical literature is nearly barren of information on the latter subject. But four pages are used in the discussion of alcohol, in a late standard book, of one-thousand pages, on the practice of medicine.

One and one-half degrees of body temperature above or below ninty-eight and three-tenths, Farenheit, call for medical attention.

A temperature of one hundred and six, is a dangerous one, and but few people recover with an additional degree.

A reduction of three or four degrees from the normal, places the person in a very dangerous place.

Alcohol reduces the temperature of the body in proportion to the amount consumed and absorbed. During the sedative stage of its effect, the temperature may be as low as ninety-six degrees, or lower. It may be two or three below normal in active delirium from wine drinking.

Full strength alcohol, constantly applied to any portion of the body, as, for instance, the finger, will cause necrosis of the tissues, followed by sloughing.

By reason of the strong affinity between alcohol and water, the fluids, of different specific gravity, mingle by the process of osmosis.

The soft part of the exposed portion becomes hardened or pickled, vessels constricted, and nerves paralyzed.

Nearly all alcohol taken into the stomach, is soon absorbed with slight dilution, and quickly finds its way to the liver, first acting as it always does, as an irritant, later, as a sedative. It produces stasis and engorgment, increasing the size of the organ.

Enlarged liver is found in the early stages of nearly all constant drinkers.

In some cases during the enlargement the liver becomes fatty. This condition is very common in wine or beer drinkers.

In drinkers of gin, whiskey, or brandy, the liver may, and very often does, after a period of enlargment, by an interchange of water and alcohol, become permanently contracted. This condition is known as "gin liver."

Men addicted to the use of alcohol, are more liable to chronic degenerative troubles, such as fatty liver, heart, or kidneys, and are more liable to acute diseases, from which they are less likely to recover.

The stomach gives its share of trouble to the alcohol consumer. Marked changes are brought about in its construction. The blood vessels become permanently distended with blood, thus interfering with good circulation, and nutrition. A pronounced cause for chronic gastritis and ulceration of the stomach.

The drink crave does not depend exclusively on the chemical properties of alcohol. It is partly caused by the avidity with which alcohol absorbs water from the tissues.

A certain effect or feeling is produced by taking alcohol or other toxic drugs. When the

drug used, has exhausted itself, been broken up or eliminated from the system, its narcotism is gone. A feeling of lassitude supervenes, which, if no more is taken, gradually passes away, and the functions of organs are re-established. Should another dose of the same be taken to overcome the bad effect produced by previous doses, and this repeated several times, a habit is formed. Habits are formed in no other way.

In a short time larger doses would be required to produce the same effect, which doses must be increased from time to time.

In view of the different pathological effect brought about by the continued poisonous effect of alcohol, it seems proper to class it as the cause of a disease, which disease has a definite pathology, which condition is capable of being understood and described, as is the pathology of Typhoid Fever, Erysipelas, Pneumonia, etc.

It is estimated that at least nine billions of cells belong to the nervous system and brain of man.

A child has as many normal cells at birth as it ever does. The average expectation of the life of a cell in the nervous system, is about thirty days. Cells multiply by division, one producing one of its kind, only, the parent ceasing to live, the new one taking its place to do cell work about a month.

These cells, like other cells in the soft parts of the body, are closed sacks, filled with fluid named albumenose, formative material, or protoplasm, resembling in appearance the white of an egg. It is, or should be, the finest material in the body, but it is good or bad protoplasm as we make it by the material we furnish for its manufacture.

The human body in health is composed of about nineteen distinct elements. If what we eat or drink contains these elements only, and in proportion, and in such form and quantity that they can be broken up in the process of digestion, the cells of the body will be supplied with good protoplasm. But if poisons that are in solution, or are soluble in the fluids of the body, are swallowed, confusion follows, if they pass to form a part of the cell contents.

The quality of cell protoplasm then depends upon the quality of the material furnished. None can be good that has a per cent of alcohol or other poison mixed with it.

The essential portion of food thus vitally prepared, passes by endosmosis to fill the cell wall.

Changes necessary to the continuance of man's existence, are constantly going on, at this, the very central point of life.

The molecules, composing the contents of the cell, have constantly in health, a regular, rythmical and definite motion, receiving as needed, the necessary supply of force and heat producing material, from the blood current, to take the place of combustion and of wasted energy.

A physio-chemical process is going on in this the most wonderful of organs, by which dead material is converted into live tissue, and living tissue into dead material, waste matter or debris of the body, which by exosmosis, in due time is eliminated. This whole process is nutrition and metabolism.

In each cell is a small dark spot called the nucleus, and a less dark one, called nucleolus, which, theoretically, have to do with the birth of another cell.

Heat of the body and body strength, can only be maintained by proper assimilation of food that has passed through catalytic process of digestion.

But little alcohol is broken up in its passage through the body, in its elimination in various ways. Nearly all goes through the blood current, and much of it becomes a part of the contents of the cell.

It is well known that alcohol coagulates albumen. The experiment is easily done.

Put a fresh egg in a clean four ounce bottle. Fill it with ordinary alcohol, shake thoroughly, and the white of the egg will be coagulated very quickly.

The white of the egg is the purest specimen of albumen easily seen in nature. It is a very coarse material as compared with protoplasm.

One can easily understand what effect even the diluted alcohol must have on the very sensitive life sustaining material.

The first effect is to create a disturbance with the molecules, producing confusion, disturbing continuity of thought, motion, temperature, and co-ordination.

Stasis follows, and there is an appreciable semi-coagulation of the albumenose in proportion to the per cent of alcohol absorbed, and a slowing of molecular movement of the cell contents.

As a continued evidence of the poisonous effects of alcohol, sixteen per cent of all drinking men suffer serious illness or injury, directly caused by it alone.

Thirty-nine per cent have chronic catarrh of the nose and throat.

Thirteen and one-tenth per cent, by examination, disclose well marked bronchial rales.

One per cent have well marked and abnormal dullness over some portion of the lungs.

The circulatory system is effected as follows:

One per cent show well marked symptoms of fatty heart.

Twelve per cent enlarged heart.

Ten and eight-tenths per cent exhibit valvular murmur.

Thirty-six and nine-tenths have weak pulse which the so-called stimulating effect of alcohol will not overcome.

Atheromatous condition of the arteries is indicated in four and eight-tenths per cent of alcohol consumers.

Derangement of the liver is in evidence in nearly every drinking man.

In forty per cent there is a fixed increase in the area of dullness, while in five and one-

tenth per cent, the liver is apparently contracted.

In two-tenths per cent there is unmistakable evidence of cirrhosis of the liver.

Morning sickness is an accompaniment of twenty-six per cent of all constant drinkers.

Twenty-three and five-tenths per cent of all drinkers have tenderness of the stomach, probably as a result of gastric catarrh.

Eight and nine-tenths per cent have enlarged spleen, and twelve per cent, alcoholic cachexia.

Defective vision, not as a result of advanced age, is found in seven and eight-tenths per cent, and nine and two-tenths per cent suffer from hemorrhoids.

One and one-half per cent show well marked alcoholic wrist drop.

Alcohol is the most common cause of polyneuritis. This disease is progressive with the drink habit. Its course is usually suspended with a cure of it, and four-fifths of the cases rapidly recover.

The preceding and following statements are based upon the middle stage of a drinking career, the one through which nearly all drunkards are passing who apply for relief by a course of medical treatment.

If the drink habit is broken nearly all associated diseases, without lesions, caused by the toxic poison disappear.

One-third of the one hundred and forty thousand insane persons in public and private asylums in this country, were free minded and sane persons, until poisoned by alcohol or some other equally potent or toxic drug.

Insanity is an acquired condition never transmitted from sire to progeny.

Forty-three per cent of all the inmates in the Bengal, India, insane asylum, were made insane by one poison, Hasheech.

Toxic drug using, of all kinds, is increasing each year.

During the period that the population of Illinois increased fifty per cent, insanity increased six hundred and sixty per cent, and one-third of the insane were alcoholics.

In two per cent patellar reflexes are absent, in twelve per cent the same are weak, in twenty-one, they are exaggerated.

In thirteen per cent pupillary reaction is sluggish.

These statistics are the summing up of thousands of clinical cases from actual records kept. From the same, six per cent showed pus in urine, two and one-half per cent, hyaline or granular casts; and in ten per cent, the urine was albumenous. Forty per cent complained of pain in the back, in the region of the kidneys.

Nearly all of these kidney troubles disappear after a cure of the drink habit, which removes the cause.

MORGAN COUNTY MEDICAL SOCIETY.

Regular meetings are held in Jacksonville the second Thursday of each month.
Membership 40.

Officers.

President.....F. P. Norbury, Jacksonville
Vice-President.....T. W. Hairgrove, Jacksonville
Secretary.....D. W. Reid, Jacksonville

The Morgan County Medical Society met in the library, President Norbury in the chair. Present 13 members. The treasurer was instructed to forward to the state treasurer balance due from members of this society, paying on the basis of $1.50 for each member of the society resident in Morgan County who has been a member for three months.

After reports of cases the following papers were read: **Case of Tubercular Laryngitis,** B. S. Gailey. **Influenza,** Allen King. **Complications of Influenza,** David Reid and A. L. Adams.

Complications of Influenza.

David Reid: I know no other disease unless it is typhoid fever that has so many and so powerful accomplices in its attack upon human life as Influenza.

It is often open to controversy as to whether we should call a certain development of the disease a complication or a manifestation of Influenza.

We do not know, always, whether the invader by undermining the patients strength, simply opens the door to his more powerful coadjutors, or whether the bacillus of influenza, invading new and unusual territory becomes exalted, as Roger expresses it, and adapting itself to new conditions, sets up the inflammations and pathological changes peculiar to these tissues.

For instance, it is known that there are several species of micro-organisms that when they attack the lung cause pneumonia; when they exist in the joints they produce articular rheumatism. They may attack the heart, the pleura or the peritonaeum, setting up the characteristic inflammations of these tissues. So it is probable that many of the so-called complications and sequences of influenza are only different kinds or forms of the disease.

Foremost among the complications of influenza both in frequency and fatality, stands pneumonia, especially when associated with advanced years.

Pneumonia stands in the relation to influenza of chief executioner. Some years ago, when lagrippe first made its appearance as an annual visitor in this country, there was a great mortality among the aged. Thousands of deaths were accredited to lagrippe that should have been called senile pneumonia. I believe that most, if not all the fatal cases of what is generally called influenza are complicated with pneumonia.

Pneumonia as a complication of influenza is more largely confined to those past middle age, and influenza pneumonia differs little from the ordinary type of the disease except as it is modified by the element of age.

Senile pneumonia, always more or less pre-

valent and fatal in the winter months is especially so in years like the present, when associated with influenza. It is one of the early accompaniments of the latter disease. It can hardly be called a sequence like some of the deep-seated rheumatic and neurotic affections that may truly be called sequellae, and in the aged is not always easily recognized.

In old age the symptoms of pneumonia are rarely so marked as in younger life. The pneumonia is often insidious in its beginning. A pneumonic flush is often the first objective symptom noticed. A senile pneumonia may be mild in all its symptoms and still be fatal. The chill if present is rarely severe, but a chill in an old man generally means pneumonia, especially if associated with influenza. Pleurisy is frequently absent. Temperature is rarely very high; cough may be slight or absent, and little more than an unusual prostration observable. I have seen an old man out shoveling snow this winter, till he dropped exhausted and delirious and had to be carried to the house with a temperature of 103, when the family did not know he was sick.

I have seen a number of cases this winter where the "grippe" in old men and women reached the point where the doctor was thought necessary, and where an examination would show a temperature of 101 or 102, with decided signs of a commencing pneumonia, yet when the patient was put to bed the temperature would fall to normal in from 1 to 3 days, the congestive pneumonia would disappear, and the physician would doubt his own diagnosis, yet the great prostration, and the long and slow convalescence, seemed to at length confirm his first impression. From a number of such cases, I believe that while pneumonia in the aged is usually more fatal than in young life, that there is still a form of pneumonia associated with influenza of the aged where the febrile symptoms are never well marked after the first day or two, where the physical examination fails to show anything more than a suspicious congestion, where the patient gradually but slowly recovers his strength, and where even a rather skillful diagnostician may never be able to verify the provisional diagnosis made at the time of his first visit.

Loomis said years ago, "senile pneumonia may run its course without expectoration, dyspnoea, flushed face or physical signs. When an old person has a slight rigor, followed by a febrile movement attended by great prostration for which there is no explanation pneumonia may be suspected though all other symptoms are absent." And to this I would add that it is no proof that our diagnosis is incorrect should the patient recover after a long convalescence.

So much for pneumonia. Among other complications of influenza as I have seen them this winter, aside from the customary catarrhal symptom, the nervousness, the acute spell of vomiting; the prostration, the aching, etc., that constitute the disease *per se*, I may mention several cases of persistent acute or subacute rheumatism, others of neuralgia, intermitting as regularly as a quotidian intermittent fever, and yielding to quinine. One case of persistent neuralgia of both heels. One patient still lying prostrated by a sciatic neuritis. One just recovered from herpes zoster. Two cases of very grave facial erysipelas, and two cases still in hand, of persistent and severe vomiting with emaciation.

In connection with this mention of erysipelas, you will recall a series of cases of facial erysipelas following influenza at the Central Hospital for the Insane, reported last month in this society by Dr. Crouch.

As to the deep seated neuroses that writers tell us of, I have had no experience in the present epidemic.

In closing, I simply mention what I consider, after pneumonia, the most frequent and important of the complications of influenza. Otitis Media, which forms the subject of another paper by Dr. Adams.

Ear Complications in Influenza.

Dr. A. L. Adams, Jacksonville: Of the various forms of influenza, the catarrhal and nervous varieties only, result in disease of the ear.

The otitis of influenza, due to the influenza bacillus, is usually an involvement of the middle ear, and from there often extends through the antrum to the mastoid cells. It is the result of a migration of micro organisms, from the nasopharynx by way of the eustachian canal to the middle ear.

These micro-organisms, are the influenza bacillus, described by Pfeiffer and Kitasato, and often associated with the pyogenic cocci, and the pneumococci. These infections account for the great variety of symptoms in various cases.

Almost invariably the affected ear is, or has been, the seat of some inflammation which may have been quiescent for a long period of time.

In some cases the disease is limited to the tube, in others to the tube and middle ear, but frequently the mastoid cells are involved also. The upper portion of the tympanic cavity presents a very favorable site for a purulent inflammation, because of the presence of considerable connective tissue which supports the mucous membrane and with the ligamentous bands holds the ossicles in place. Inflammation of the middle ear is one of the most frequent complications of influenza. Holt places it as second in frequency among the complications of this disease in children.

Previous to the epidemic of influenza in 1889, there were annually from twelve to twenty cases of mastoid disease in the New York Eye and Ear Infirmary, while in 1897 there were one hundred and sixty-one mastoid operations in the same hospital.

Moos describes four varieties of inflammation of the middle ear as a result of influenza.

First. Swelling and hyperemia of the lining of the middle ear with little or no interference with the hearing.

Second. Pain, fever, diffuse redness of the tympanic membrane, and exudation into the

middle ear, at first sero-mucoid, later muco-purulent.

Third. The hemorrhagic form, the most typical of the four varieties. In which bullae varying from bright red to dull venous color are usually situated on the tympanic membrane, but at times found in the osseous portion of the canal; there are much pain, fever and deafness.

Fourth. The form characterized by violent purulent inflammation of all parts of the middle ear, generally involving the mastoid, with fever, pain and great prostration. Inflammation of the auditory nerve has also been reported as a result of influenza.

The peculiar features of otitis media from influenza are, sudden onset, with excessively severe pain radiating from the ear, marked hyperaemia of all structures with extravisation of serum and blood into the tympanum. These are sometimes ring shaped. Severe hemorrhage from the ear as a result of the marked hyperaemia following rupture or incision is considered by some a special feature of influenza otitis.

There is also a marked elevation of temperature—101°-103°—severe headache and depression. Hearing becomes dull, tinnitus is present and may be distressing, vertigo is often present.

In children there may be convulsions as an early symptom and meningitis may be suspected. The pain at first is localized within the ear but later is diffused over side of head, the pain continues until relieved artificially or until the products of inflammation are evacuated by rupture of the drum membrane. In the very early stages the congestion may be confined wholly to the upper part of the drum. It will appear a deep dull red color indicating venous engorgement of the under lying tissues.

At this time measures to abate the disease will prove most efficacious. Later the whole drum becomes of a uniform dull red color, the normal luster is lacking, its surface may be moist. The upper part of the drum may seem oedematous.

Following scarlatina, or any disease with a violent and sudden infection, the surface of the drum may appear a dead white color, due to a necrosis of the superficial epithelium covering it. This dead epithelium is easily removed and below is seen the characteristic red color of the inflamed membrane. Especially during the early stages the tympanic membrane should be carefully inspected sufficiently often to know its condition and thus be a guide to further treatment.

Pain may continue after incision or rupture, for a day or two, which in an ordinary case of otitis, would make us suspect insufficient drainage. After free drainage of the middle ear, the symptoms may all abate, but occasionally there is an invasion of the mastoid cells, with marked pain and tenderness behind the ear which will become a serious complication unless active measures are taken to combat the condition.

The mastoid may become involved before the appearance of discharge or afterward, in either case an increase of pain and greater severity of the general symptoms, is, as a rule, noticed. Sometimes, however, pus forms in the mastoid with very little spontaneous pain, but it is always elicited by pressure over the antrum or tip of the mastoid.

A pathognomonic sign of necrosis of the mastoid cells is the drooping or dropping down of the membranous auditory canal at its supero-posterior portion. Because of this it is sometimes impossible to see the tympanic membrane. Involvement of intra cranial structures is usually indicated by increase in temperature, delirium, and convulsive movements followed by paralysis or paresis either on the same or opposite side, according to the special side involved.

When there is invasion of the large sinuses of the dura mater, either directly from the middle ear or after mastoid involvement symptoms of pyaemic infection appear. These are rigors, profuse sweating and sudden rise of temperature to 105° or 106° with almost immediate fall to a normal or subnormal temperature. These changes in temperature may occur every few hours or every day or two.

Before speaking of the treatment of this complication of influenza, I wish to say that few appliances are necessary in its treatment and all practitioners should be equipped and willing to give the necessary local treatment, for often times a few hours delay may mean a great deal to the patient.

Treatment: If the patient is seen early active antiphlogistic measures may avert the disease. The nose should be cleansed with an alkaline antiseptic solution. If there is much congestion and stopping up of the nose this should be relieved, by first using a small amount of 2 per cent cocaine, or 1-5000 adrenaline solution, then the post-nasal space should be cleansed by the alkaline antiseptic used in an atomizer with a long tube and up turned tip.

Now by the use of Argyrol 25 per cent, or silver nitrate 5-10 grains to the ounce, by means of a post-nasal applicator, we can reach the tissues from which the infection comes. After this the use in the nose of an oily solution containing Menthol 3-5 gr. to the ounce, or Benzoinal, will prolong the contractile effect of the cocaine, and secure more efficient drainage from the nose.

For the relief of pain in the early stages, the use of the artificial leech either just in front of the tragus, or if the mastoid be tender, just over the antrum or the mastoid tip, will be effective. If the pain be severe, hot 1-5000 bichloride of mercury solutions injected into the ear with a fountain syringe, using from a pint to a quart each hour, followed by external hot applications will give decided relief.

Calomel in divided doses followed by a saline is usually indicated. An opiate or one of the coal tar products may now be given to secure rest, but should not be repeated to re-

lieve pain for fear of masking the real condition. Ear drops containing

℞ Atropia 1 grain
Cocaine 2 grains
Dist: Water 2 3.

are often used, putting eight drops warmed into the ear three or four times a day.

If after the foregoing treatment, the pain continues, and the ear drum becomes bulged, an early and free vertical incision should be made through its posterior portion and carried through the periosteum of the promontory. In this way not only is the confined mucus or pus evacuated but the engorged tissues are depleted. After the incision the ear should be douched to promote the discharge and to destroy the micro-organisms.

Should the mastoid become involved, either continuous cold or frequent hot applications should be applied to relieve the congestion, but not for longer than forty-eight hours unless there be marked improvement in the symptoms.

In otitis of influenza if the bone is involved its destruction is rapid, and an early operation is often imperative to avoid meningitis, brain abscess, facial paralysis or sinus thrombosis.

In a case recently observed, a child three years of age had an acute supprative inflammation of the middle ear following scarlet fever. Three weeks later was taken with the Grippe. One day after the discharge from the ear ceased, tenderness on pressure over mastoid was noticed, but he complained of no pain except when pressure was made. On the morning of the third day after the mastoid was first found to be swollen and painful on pressure, I opened it, finding it filled with offensive pus with considerable destruction of bone. The antrum was entered and found to contain pus and granulation tissue which was scraped out. By the removal of necrosed bone the membranus sinus was necessarily exposed at the bend of the sigmoid. The sinus being apparently healthy was not opened. The discharge from the ear stopped at once and he made a prompt and uneventful recovery.

In this case there was no pain in or about the ear except upon pressure, since the original acute inflammation of the middle ear six weeks before.

WILL COUNTY MEDICAL SOCIETY.

Regular meetings are held at Joliet the second Tuesday of each month. Membership 46.

Officers.

President ..... H. A. Patterson, Joliet
Vice President ..... H. W. Woodruff, Joliet
Secretary-Treasurer ..... J. P. Benson, Joliet
Censors: H. W. Curtis, Wilmington; Marion K. Bowles, Joliet; V. J. Cohenour, Joliet.

The regular monthly meeting of the Will County Medical Society was held last evening, April 5th, at St. Joseph's Hospital and was well attended. In the absence of Dr. Patterson, Vice-President Woodruff called the meeting to order and Dr. Leach was appointed temporary secretary. Two new members were admitted to the Society. Delegates to the State Medical Society meeting were appointed as follows: Dr. W. M. Dougall, Joliet, and Dr. Curtiss of Wilmington. The proposed bill for Preventing the Adulteration or Mis-Branding of Foods and Drugs was endorsed by the Society. A banquet will be given next month to the elder members of the Will County Medical Society and a committee consisting of Dr. Patterson, Dr. Woodruff, Dr. Benson, Dr. Nash and Dr. Dougall was appointed to arrange for same. The following paper was read by Dr. V. J. Cohenour and was ably discussed by Dr. Woodruff, Dr. Dougall, Dr. Nash and Dr. McGann.

Some Points in Regard to Post-Diphtheritic Paralysis with Report of a Case.

By V. J. Cohenour. M. D., Joliet.

The frequency of post-diphtheritic paralysis is in direct proportion to the severity of the general infection, yet a severe paralysis may follow a mild type of diphtheria. The location of the membrane has little to do with determining muscle or nerve degeneration which follows. However, a paralysis is more likely to follow a nasal or laryngeal form. Local or general paralysis is the rule after severe toxemia of diphtheria. Paralysis is more likely to occur if from four to seven days have elapsed before the patient is seen by the physician.

Dr. Woodhead in the study of 7,832 cases of diphtheria found 1,362 cases of subsequent paralysis. The time of onset of the paralyses being as follows:

A—For the palate—5th to the 55th day of disease.

B—For the oculo-motor muscles 4th to the 70th day of disease.

C—For the heart—5th to 10th day of the disease.

D—For other muscles 10th to the 15th day of the disease.

In Myers report, 1,316 cases of diphtheria were followed by 275 or 21 per cent of some form of paralysis. The duration of the paralysis varied from two days to weeks and months, depending on the part paralyzed and the extent and nature of damage as well as treatment when damage was reparable. Dr. Felt of Philadelphia reported a case of paralysis of larynx in a child of 12 years which was of a year's standing there being no improvement. Dr. Wilson, a case of bilateral deafness in a woman 33 years of age which persisted seven months, while Dr. Tooth's case of bilateral deafness gained perfect hearing in eight weeks. Dr. Chas. Kerley reported a case of paralysis of left leg occurring eight days after attack of diphtheria. This lasted three weeks. Dr. Aubertin of Paris reported a case of neglected diphtheria in which occurred malaise, severe toxemia and nephritic involvement followed by motor and sensory paralyses of general nature with ataxia and later, atrophy. After six months the recovery was only partial.

Pathological changes occur in peripheral nerves, nerve trunks and roots, in the ganglia, in the spinal cord and brain, and their coverings. The muscles show degenerative changes secondary to and independent of nerve lesions;

this is especially true in the heart muscle. The direct cause of paralysis is a toxine eliminated within the body by the Klebs-Loeffler bacillus. This toxine is carried in the blood stream as has been demonstrated by Drs. Roux and Yersin, two noted French pathologists. Drs. Aubertin and M. de Rogers of Paris conclude that the paralysis is due to toxines in the circulation and their action upon the nerve cells.

Symptoms—General:

Single nerves may be involved affecting the muscles they supply; or when convalescence is established in the second or third week, there may be a progressive loss of strength and wasting of muscle, with regurgitation of liquids through the nose and a nasal tone of voice. Sometimes the gait is weak and ataxic so that the child staggers when attempting to walk. Emaciation is general in well advanced cases. Only in extreme cases are the sphincters paralyzed. Palsy of the extremities may be combined with that of the respiratory or heart muscles.

The important types of paralysis which are of interest are as follows: palatal, ocular, cardiac, diaphragmatic and cerebral.

1. Palatal type—The palate is the most frequent site of post-diphtheritic paralysis, over 40 per cent of the 275 cases reported by Myers were of this form. The palate may be the only part involved in paralysis, or may be involved with other muscles. Approximately one-half the cases of paralysis of the palate are in connection with other muscles. The sense of taste and smell are rarely affected; occasionally the hearing is affected. The symptoms are, difficulty in swallowing, regurgitation of liquids through the nose; swallowing causes short laryngeal cough; the voice is nasal and articulation difficult. There is snoring respiration during sleep. The velum is immovable with anaesthesia and abolished reflexes.

2. Ocular type—Diphtheria is the most common cause of paralysis of the ocular muscles. These are not an essential part of the diphtheria but due to the presence in the system of certain resulting toxines. When the ocular muscles are affected with paralysis the order is, muscles of the fauces affecting deglutation then successively involving the muscles of accommodation and those of the extremities. Excepting the muscles of the palate, the ciliary muscles are more frequently involved as a sequence of diphtheria. These cases are generally bilateral, although Dr. Jefferson reported one case of unilateral paralysis of accommodation with midriasis. Paralysis of the eye muscles occurs two to six weeks after the attack of diphtheria and usually disappears in the same period of time. This is first noticed by the fact that the patient is unable to see near objects distinctly, for example, reading. The external rectii may be paralyzed, in which case the paralysis is of short duration. While recovery is slow when the internal recti are affected. Ptosis occurs rarely.

3. Cardiac type—The frequency is 9.7 per cent or 32 in 328 cases according to the latest report of the American Pediatric Society. In 275 cases collected by Myers, 64 were of this variety—all were fatal. The direct cause of heart failure in diphtheria has been variously discussed. It is difficult to distinguish changes due to paralysis of vagus and myocardial degeneration. In fact, the distinction can scarcely be made except at autopoxy. Some authors think the degeneration of the heart muscle is due to the effect of the toxines; by others these changes in the heart muscle are said to be secondary to functional disturbances of the vagi and organic changes in the nerve structure. The onset varies from the second to the 36th day of the disease. The average time of onset is early, being the 8th day in this list of statistics. The most frequent sufferers are children from two to nine years old. It is impossible to diagnose a myocarditis from a neuritis of the pneumogastric nerves during life.

The symptoms are a weak, irregular heart action, which may be combined with an intermittent or rapid pulse. Bradycardia is frequent. Generally there is a lowering of temperature; abdominal pains may be combined with nausea or vomiting. A galloping rhythm with dilatation of the heart may occur. A short first sound with a systolic murmur at the apex of the heart, and blueness of the extremities are observed in severe cases. There may be extreme restlessness in some cases while in others there is drowsiness and apathy. In other cases we notice sense of weight or distress over the region of the heart; also labored or embarrassed respiration. The duration of fatal cases is from one to fourteen days. The cardinal symptoms are, brady cardia, vomiting and lowering of temperature. The prognosis is always bad in this variety.

4. Diaphragmatic type—Of the 275 cases reported by Myers, 21 were of this variety—10 of the number recovered and 11 died, making 13.7 per cent of total deaths due to paralysis. This type occurs from the 11th to 50th day of the disease, the average being the 37th day. Children from two to eight years old are most frequently attacked. The symptoms are dyspnoea, depression of the abdomen during inspiration, bulging during expiration, and respiration rapid or panting, weakness of the voice, and a tendency to accumulation of mucous in the trachea or bronchi.

This form of paralysis occurs alone as well as with a general paralysis. Asphyxia may occur at any time. When the external respiratory muscles are affected, breathing is almost impossible without assistance. The duration of fatal cases is from 5 to 6 days. When the phrenic nerves alone are affected the prognosis is more hopeful since external respiratory muscles may keep up the breathing until the phrenic nerve injury recovers.

As an instance of this form of paralysis combined with more or less general palsy, is the case of Thadeus S. age 12 years, who had severe local symptoms of diphtheria and profound constitutional disturbances. His attack began five days before I was called. At the first visit he had the following symptoms: high temperature (103) pulse rate 120, bound-

ing and irregular, severe headaches, hoarseness, extremely fetid breath, swollen and enlarged glands, (cervical), and the gray membrane covering palate, tonsils, pharynx, and a small pea-size patch on the tip of the tongue and lower lip. This membrane also extended into the post nasal area. I administered 2,000 units of concentrated antitoxine and repeated the same dose in about 12 hours. In 10 days he had apparently recovered although weak, drowsy, and apathetic.

About two weeks afterwards I noticed a peculiar nasal tone of voice anaesthesia and immovability of palate which indicated a paralysis of palate. He also complained of dizziness and a loss of appetite. About three days later he could not see to read or perceive near objects. His pupils were dilated and failed to re-act to light showing paralysis of the muscles of accommodation. Just 32 days after my first visit I was hurriedly summoned and found the boy lying on the bed with both lower limbs and right side of the body paralyzed. His breathing was shallow and noisy, and dyspnoea was marked. With each inspiration the upper abdominal wall retracted. Moist rales were heard in the lungs mucous collecting in the trachea and bronchii. He was semi-conscious—the only sign of intelligence was a motioning of the left arm and hands. Aphonia was complete. He could swallow small amounts of liquids which caused more or less coughing. His pulse rate was slow, being only 40 to 50, weak and irregular. Albumen persisted. He gradually became weaker—his heart action becoming slower and slower and breathing more labored. A few hours later the sphincters were paralyzed. About 38 hours afterwards he became weaker and his breathing stopped.

5. Cerebral type—This is purely an accidental form of paralysis and occurs frequently after attacks of diphtheria. The pathological lesion is thrombus, embolism or ruptured blood vessels in the internal capsule of the brain giving rise to hemiplegia ataxia and all other symptoms displayed in adult case of hemiplegia. This paralysis follows not only diphtheria, but also influenza, typhoid fever, scarlet fever, measles, and other infectious diseases, really it should not be classed as a post-diphtheritic palsy.

Prognosis—In general the prognosis for recovery is good in all forms excepting general cerebral, diaphragmatic, and cardiac paralyses. In the statistics of Myers 29 per cent of 275 cases were fatal. When cardiac paralysis develops either alone or combined with other types, death is the rule. The prognosis is extremely bad when both the diaphragm and external respiratory muscles are involved. Dr. F. Burrows reports 2093 cases of diphtheria treated by him in the Boston City Hospital were followed by 106 cases of paralysis. Post diphtheritic paralysis in hospital and private practice is much less common than before antitoxine was used.

The prognosis for subsequent cases of paralysis in diphtheria depends upon the early administration of sufficient antitoxine as is shown by Brays and Guerards' table:

Time of Administration of Antitoxine—

	Cases	Death	Mortality
1st day of disease.....	1415	5	3.5
2 " "	2640	213	8.0
3 " "	2340	300	12.8
4 " "	1458	346	23.6
5 " and after	1912	671	35.0

By compiling all available statistics, paralysis follows diphtheria in 15.5 per cent of all cases.

First in order to prevent the paralysis, we must prevent diphtheria. This may be done by the administering of immunizing doses of antitoxine to all children in the family where diphtheria exists, also to all children exposed. 500 units usually renders immunity for three weeks. Every suspected case or every known case of diphtheria should receive as early as possible a large dose, (2000 to 3000 units) of antitoxine, regardless of the age. This may be repeated in a period of 12 hours or more. Absolute rest in bed during the toxic symptoms should be enjoined. The treatment of the paralysis is similar to that of any other paralysis and is not within the scope of my paper.

McLEAN COUNTY MEDICAL SOCIETY.

Regular meetings are held in Bloomington the first Thursday of each month. Membership 95.

Officers.

President.....F. C. Vandervort, Bloomington
Secretary .... A. F. Kaeser, Bloomington
Treasurer .....A. F. Kaeser, Bloomington
Censors..C. M. Noble, J. H. Fenelon, C. E. Chapin
Delegate to the State Convention..F J Parkhurst

The McLean County Medical Society met at the Assembly Hall, Illinois Hotel, Bloomington, April 7, at 7:30 p. m., Dr. F. C. Vandervort, presiding.

The minutes of the last meeting were read and approved.

Dr. R. A. Noble reported for the banquet committee that 80 plates were prepared and that the Society was to adjourn to the banquet hall as soon as the business could be transacted.

The treasurer's annual report showed that there was cash on hand April 5, 1904, $51.65. Dr. C. M. Noble reported for the board of censors that they had examined the treasurer's books and found the same correct.

A communication was read from Dr. J. Whitney Hall asking to be reinstated as a member of our Society.

It was moved and seconded that this be referred to the board of censors and ask them to report at once. Carried.

The board returned a favorable report upon which the secretary was instructed to cast the vote of the Society for reinstating Dr. Hall.

The Society voted to ask Dr. C. R. Parke to prepare a history of the McLean County Medical Society which is to be included in the volume

of history now being prepared by the McLean County Historical Society.

It was voted to fix the dues for the coming year at $2.50.

The officers elected for the coming year are: (See heading of society.)

It was voted that the president with two other members act as a committee to make recommendations as to what action should be taken in regard to members in arrears for dues of past year, and also to recommend if necessary any changes in our constitution to cover this point. This motion to serve as first notice of any such contemplated change.

The president announced that Dr. O. A. Kell, of Kankakee would next month read a paper before the Society on "Classifications of Insanity with Cases."

After adjournment the members proceeded to the banquet hall where they were joined by the ladies in honor of the "Fiftieth Anniversary of Our Society."

After an elaborate menu the following toasts were responded to: F. C. Vandervort, Toastmaster: Medical Organization, O. B. Will, of Peoria; History of the Society 1854-1879, C. R. Parke; History of the Society 1880-1904, W. E. Guthrie; The Society's Future, J. B. Taylor; The Return of the Prodigal, J. W. Hall.

Medical Organization.

Dr. O. B. Will, of Peoria, responded to the first toast "Medical Organization." He talked of the origin of the medical society and of the great benefit it had been to the medical profession. He said that in the olden days not much interest was taken in medical societies until it was seen of how great benefit they were to the members and after that medical societies have been growing rapidly and there is now scarcely a county in the United States where medical societies are not located. He said the present generation should feel greatly indebted to the old-time doctors who formed the first organization as now it can plainly be seen what a great benefit they have been. The most cherished dreams of the founders of the institutions are rapidly being carried out to a successful termination and if the work continues to progress there will be but few places in the United States at least where monthly meetings of members of the medical profession are not held for the purpose of talking over the vital things pertaining to medicine and in this manner intelligence will be spread through the length and breadth of the land. In this day and hour of trusts said he, the medical proefssion has kept free from entering into anything that would be a detriment to the profession as a whole but the change in the socialistic conditions almost makes it imperative that the medical men have their associations. From the beginning the medical men recognized that the associations were bound to become of great benefit and they worked hard to see them become regular institutions. As other professions advanced so did the medical profession advance and they have placed their stamp of approval on medical societies. We hesitate not to point out the noble trace of ancestry of the organization of the medical profession. The time is coming when we must rouse ourselves and do much more in the future than we have done in the past in order that we may keep up the plans originally mapped out for us by the founders of the medical society.

Dr. Parke's Address.

Dr. Charles R. Parke, now of Louisville, Ky., spoke of the history of the society from its foundation to 1879. He said:

Mr. President and Members of the McLean County Medical Society. Ladies and Gentlemen: I am truly delighted to meet once more the members of the McLean County Medical Society, and especially on an occasion of this kind—medical society "golden jubilees" are a little out of the ordinary.

In looking over this audience I am sorry to say there is one familiar face missing—Dr. Jordan. And so we go, one by one, as did the charter members of this society, until only one is left.

I located in Bloomington, August, 1852, and opened an office on the west side of the court house square, where the Headquarters clothing store now stands. Bloomington at that time was a small village, but known as the "city of Bloomington." Many of her old citizens, although not blessed with an abundance of this world's goods, were nevertheless aristocratic and quite ambitious. At that time the Central and Chicago & Alton railroads were being surveyed, and to hear many of the citizens talk of the future of Bloomington, one would suppose the national capitol at Washington might some day be located here.

Many a dry goods box in front of the stores was badly demolished by the loafers' knives while they discussed the glorious future of this city. All of which has not yet been fully realized, although wonderful strides have been made in the direction indicated.

In 1852 there were few buildings of any account around the court house square, and they mostly one-story frames. My brothers erected the first brick building west of the court house square. We had sidewalks around the square and on Front street constructed of plank and answered two purposes—they kept the pedestrians out of the mud and afforded an admirable home for rats.

The resident physicians were Dr. A. H. Luce, G. W. Stipp, T. F. Worrell, T. P. Rogers, Z. L. Hoover, William A. Elder, E. K. Crothers, Espey and Elkins.

McLean county at that time was sparsely settled and the roads in their normal state. The sloughs at certain seasons of the year were almost impassable for wagons, the travelers frequently being compelled to drive half a mile, more or less, up the slough in order to find a suitable place for crossing Frequently the doctors were compelled to travel on horseback—saddle-bag doctors.

The native "sucker" of that day was constitutionally averse to disturbing the virgin soil, consequently we had miserable roads during the spring. They ("the natives") even assured the new comers clover and timothy would not grow on the prairies.

The practice of medicine in the fifties, I can assure you was no easy task. Several times while making my night visits over the prairies between Bloomington and White Oak and "Stringtown" I lost my way and wandered around for hours before finding my bearings—strictly sober at the time.

I once put in a whole day visiting an old lady who lived north of Saybrook. She was suffering from varicose ulcers. While the husband sat in front of the old log fire looking wise, the madame poured into my ears, for a long hour, her tale of woe (you know a woman can say considerable in an hour). As soon as she let up a little to catch her breath, I ordered my team. While listening to the sad history of that unfortunate limb, I heard a great racket in the poultry yard, and supposed they were preparing to treat me to a preachers' dinner. The dinner did not materialize, but when I entered my buggy for home the old gentleman informed me his wife had made me a present of six chickens and two dozen eggs until I was better paid. I thanked him and drove off. Six old hens and two dozen eggs for a double team twelve hours, and medical services thrown in—he still owes me the bill. Just think of it. Fortunately there were not many such cases in the fifties, but enough. There may be some now.

Some families take to the profession kindly with all its ups and downs. My friend, Dr. J. B. Taylor, inherits his medical turn of mind; his father and grandfather both were physicians. Then again on our roll call of membership we have Dr. Harrison Noble, our first vice president. Stephen W. Noble, Charles Noble, R. A. Noble and Noble of McLean—truly a Noble family of physicians.

On the 20th of March, 1854, the following physicians met in the court house for the purpose of organizing a medical society: Drs. A. H. Luce, H. and S. Noble, Worrell, Crothers, Rodgers, Roe, Hoover, Finch, Parke, Elder, Espey, Etipp, Crist, Cromwell and Freese. Dr. Luce was called to the chair and Dr. Freese was appointed secretary. The following resolutions were adopted:

"Resolved, That we now proceed to organize a medical society of the county of McLean. Second—That a committee of five be appointed to draw up a constitution and by-laws for this society. The chair appointed Drs. Stipp, Hoover and Roe and the meeting added Drs. Luce and Finch, which completed the committee. Third—That this society shall be auxiliary to the state and national societies. Fourth—That we adjourn to meet two weeks from tonight to receive the report of committee. That all physicians of this and adjoining counties be invited to meet and participate with us.

The second meeting of the society was held pursuant to adjournment at the court house, April 3, 1854. The committee appointed to draft constitution and by-laws reported and report accepted, when the following officers were elected: President, Dr. A. H. Luce; vice president, Dr. H. Noble; corresponding secretary, Dr. E. R. Roe; recording secretary, Dr. William Cromwell; treasurer, Dr. T. P. Rodgers; censors, Drs. S. W. Noble, Z. L. Hoover and William A. Elder. The following are the original signers of the constitution: Drs. A. H. Luce, G. W. Stipp, E. R. Roe, William Cromwell, S. W. Noble, John Finch, D. L. Crist, C. R. Parke, H. Noble, J. R. Freese, T. F. Worrell, E. K. Crothers, Espey and Conkling.

While 'tis pleasant to be here this evening mingling with this happy assemblage, to me there is sadness in the retrospect. When I pause to reflect on the fact that fifty years ago I assisted in organizing the McLean County Medical Society, and that all my associates at that time have gone to their eternal reward, it naturally clouds somewhat the pleasure of the "golden jubilee," but we must submit to the inevitable. The familiar countenances of those present on that memorable occasion still lingers in my memory, as well as many of their jolly remarks, especially those of Dr. T. F. Worrell, whom you all well remember.

As stated, Dr. A. H. Luce was our first president. He was the leading surgeon of McLean County at that time and "one of nature's noblemen."

The McLean County Medical Society has been a source of much benefit to its members, giving an opportunity to meet, consult and exchange views on difficult, complicated cases, thereby preparing each member to recognize similar cases in the future, and be able to treat them promptly and successfully. This frequent intercourse also enabled us to become better acquainted with each other, strengthening brotherly attachments, binding the members in one harmonious whole.

Metaphorically speaking, medical societies may be likened to so many wells, sunken deep down through earth and rock in search of gravel beds, where nature has stored an abundance of man's most precious beverage—pure water—while members of the society may be looked upon as numerous buckets, descending hour after hour, day and night, returning ladened with correct knowledge of the cause of disease and its scientific treatment, dispensing the same to suffering humanity.

I beseech my medical brethren here present to keep this precious well properly protected, so no infectious surface microbes be allowed to enter and lessen its power for good.

The old, original buckets of the McLean County Medical Society have long since ceased to labor at the well, and also many of a later date, but left it in fine condition for the use of their successors.

The doctor's life, like the bucket in the well, is an up and down life, in bed and out at all hours.

And now what can I say for the last old charter bucket that has been descending and

ascending the McLean County Medical well for the last fifty years:

"This old oaken bucket,
This iron bound bucket,
This moss covered bucket
That hung in the well."
Good-by.

Dr. W. E. Guthrie's Talk.

Dr. W. E. Guthrie in reviewing the history of the society from 1880 to 1904, said that his work for this society was carrying extra chairs for its meetings into the office of Drs. White & Worrell, where he was then studying medicine. Of the active participants in those meetings who lived in Bloomington in 1881 only four are alive and three in active practice; from the country towns only Orner and Winter of Saybrook; McFarland, of Heyworth; Holderness, of Chenoa; Noble, of McLean; Chapman, of White Oak, and Hull, of Arrowsmith.

Dr. Guthrie then devoted considerable of the time of his address to a very entertaining description of an imaginary meeting of the McLean County Medical Society in the old days. He described the office of Drs. White and Worrell, where the meeting was held, in the old Royce block, and as each member of the society, in imagination, entered the room, Dr. Guthrie, in a sentence or two, took off the salient points of his personal appearance, or referred to some striking incident of his personal or professional career, some of which were not altogether complimentary, but which provoked the risibilities of his hearers.

"Dr. White sits by the fire smoking and musing; Dr. Worrell, pompous of manner and plethoric of speech, is talking sometimes to Dr. White, sometimes to me, but as often to himself. The dignified form and towering head of Dr. A. Luce are framed by the door; with great gravity and dignity he shakes hands with the other doctors and does not notice the insect sitting in the corner. Dr. Howard Crist next enters, shakes hands around and takes a seat, still smoking his cigar. Dr. Kirk, of Atlanta, of whom our own Dr. Vandervort is a very good copy, arrives next and asks Dr. White into an adjoining room for a private talk before the meeting begins. Dr. William A. Elder and Dr. R. G. Laughlin come in, engaged in earnest conversation—Dr. Elder quiet and unassuming. Dr. Laughlin a pink of propriety in dress and demeanor, every inch a military man. Dr. Gray, a tall, portly, fine looking gentleman, is the next to arrive. He had retired from practice, but rarely missed a meeting. Dr. Hiram Luce, slender, straight and stern, enters and takes a seat, picking up a book to read. Dr. Luce was a very talented man, but his practice was never so large as his talents deserved. Dr. Winter of Saybrook, comes in and monopolizes the talk.

The door opens and the secretary enters—Dr. Little, walking the steady, even motion of a ship entering port, with a book of minutes under his left arm, an umbrella in his right hand pointing to a spot exactly three paces to the front. After Dr. Lehman there enters a new doctor who speaks in broken English and manifests other noticeable characteristics—he has married a Bloomington girl and already has a large practice—it is Dr. Wunderlich. Now there is a great racket—a general and his staff are arriving. It is the president of Dr. Hill's dissecting academy, and his students and admirers from near and far. A quick step is heard and Dr. Lee Smith arrives in mudbespattered coat, and condones with Dr. Worrell on the recent "8 to 7 crime" which kept his beloved Tilden from the presidency. It was at that time that Dr. Smith's hair began to turn gray. As the society is about to open two female forms appear, Drs. E. A. Shaw and Eliza Dawson.

Among those who did not attend the meeting Dr. Guthrie mentions Dr. Parke, who, he said, stayed away from the meeting because he was the holder of a patent on a splint which he had invented for treatment of fractures of the femur. On account of holding this patent he withdrew from the membership of the society. It was told as a joke on Dr. Parke that after inventing his splint, securing his patent and withdrawing from the society, he was confronted by what he most desired, a fracture of the femur; it was treated in the most approved manner and resulted in an embarrassing un-united fracture, doubtless through no fault of the splint.

Dr. Guthrie mentioned as other members of the society at that time Drs. Asire, Bickmore, Ballard, D. L. Crist, Carr, Crothers, Cole, Hoover, T. Haering, Kopp, D. O. Moore, Miller, Rogers, W. T. F. Smith, Tenney. In the adjoining towns were McFarland and Pollock at Heyworth; Spear at Shirley; Johnson and Noble at McLean; Harvey Parkhurst and G. D. Elder at Danvers; Chapman at White Oak; Hubbard and Johnston at Hudson; Kerr of El Paso; Graham, Jones and Waters of Lexington; C. S. Elder and Holderness at Chenoa; Shinn and Sweeney at Normal; Douglas at Colfax; Skaggs at Ellsworth; Hall at Arrowsmith; Orner and Winter at Saybrook; Godfrey at Bellflower; McKenzie, Fisher and Espey at Leroy; Montgomery at Downs.

Dr. Guthrie then mentioned a long list of names of practitioners outside of the medical society, including Drs. McCann Dunn, Jeff Dunn, B. P. Marsh, J. Loar, N. Loar, Zera Waters, M. Faloon, Wright, Amos S. Burrows, J. W. Craig, Hubbard, Voak, Weber, Woolsey of Normal.

Those who have been here and either have died or moved away are: S. T. Anderson, Richard Burns, G. W. Mason, A. T. Barnes, Mrs. Crothers, C. J. Corley, J. Montgomery, G. M. Smith, W. L. Hallam, A. T. Darrah, Taylor, N. F. Jordan, C. E. Burke, J. H. Stein.

"Our community is considered a healthy one, but it is either unhealthy for physicians or especially healthy for their wives, for their are now living eighteen widows of doctors who have practiced in Bloomington. This community has been especially blessed with a high class of medical practitioners. There has been less quarreling and backbiting among us than in any town within my knowledge."

In conclusion Dr. Guthrie said: "In this glass of pure water which has been sterilized of every bacillus of professional envy or jealousy, rancor or hatred, I drink to the continual prosperity of

this society and its members. And when, fifty years hence, the society celebrates its centennial anniversary, I will tell those present of this banquet and describe the sterling qualities and humorous characteristics of Drs. Hill, Smith, Parke, Mammen, Chapin, Meyer, McCormick and other old fellows long since passed away."

Dr. J. B. Taylor.

In speaking to the "Future of the McLean County Medical Society" Dr. J. B. Taylor said in part: "I am fated to be the last on every program on which I appear. Fourteenth and last at a banquet of the Business Men's Association a year and a half ago. Fifteenth or sixteenth—and last—at a banquet in February recently. I judged I would be seventeenth and last this evening. I am confused and concerned at the meaning of this. Perhaps they have arranged to put the poorer wine last, when the appetite is somewhat cloyed and dulled by the sweet things which have gone before. Perhaps it is a decreasing series in age. This is relatively comforting. After the revered fathers (Dr. Parke and Dr. Guthrie) have spoken of the days gone by to which their patriarchal memories reach back, it may be quite the correct thing to have the prophecy of what the society is yet to be, lisped by some one of us younger fellows whose face is still in the front."

After two or three clever stories, Dr. Taylor said: "This evening celebrates the continued evolution of the society, and in the spirit of prophecy I am to tell what it will be. First, the medicine of the future will be more strenuous, more vigorous, more tested, more interlocked with the other sciences. We should all be sorry if our profession did not join the profession of advance. Our profession of the future will be a more disciplined profession. It must stand square to the demand and the accuracy of a dozen sciences which interlock with it. It will do away with mysticism, with mistiness, guesswork, groping, the temptation to play upon your own credulity and that of others. It demands that juggling and hocus-pocus disappear from the profession. The profession will more and more wear the badge of thinkers.

"Second. These handmaidens which make us more accurate will lead us to better success. Future members of the society will have arms and powers which we cannot have, and will attain proportionately better results.

"Third. There will be more thorough dignity in the profession in the coming days than now. The scientific spirit will supplant the buncomb spirit. The remnants of spread-eagle, of pretense, of false swagger, which crop up and show themselves in the profession today, will in those good days to come have fallen into disrepute.

"Fourth. Members of the profession in the future will in larger degree be men of affairs. They will intermingle more with the world's great interests which touch men as citizens. Their public offices will be magnified; they will become more and more the adviser of society.

"What of the future of the McLean County Medical Society? The same as the future of medicine. In the enlarged and more cultured and yet more beautiful Bloomington; in the advanced, wealthier and more exacting McLean county, the society will be the mouthpiece, the oragnic body, the means of a commensurately advanced medical profession. It will be a more trained and balanced profession; a better armed and more successful profession standing more upon the consciousness of its worth—less P. T. Barnum in it, less pretense in it—a profession which by reason of the sciences which it overlaps will be more efficient, more interlocked, more honored in all public movements—and in this part of the world the McLean County Medical Society will be its prophet.

PEORIA CITY MEDICAL SOCIETY.

Regular meetings are held in the Observatory Building, Peoria, on the first and third Tuesdays of each month. Membership 72.

Officers.

President ..... L. A. McFadden
First Vice President ..... J. C. Roberts
Second Vice President ..... B. M. Stephenson
Treasurer ..... Jeanette Wallace
Secretary ..... S. M. Miller
Censors: E. M. Sutton, one year; A. J. Kanne, two years; F. B. Lucas, three years.

The Peoria City Medical Society met in the Observatory Building March 15, Dr. L. A. McFadden, presiding.

E. A. Garrett and F. K. Sidley were admitted to membership.

The secretary read a communication from C. A. L. Reed, chairman of the Legislative Committee of the American Medical Association, urging the support of the society to the Pure Food Bill pending before Congress. A committee consisting of R. A. Kerr, C. H. Brobst and C. U. Collins was appointed to act in accordance to the request of Dr. Reed.

Dr. Lucas reported a case of **Ectopic Gestation.**

Dr. Lucas: The importance of operation before serious hemorrhage and the difficulties attending a positive diagnosis of the form of rupture present; whether it be into the broad ligament with restriction of hemorrhage, or out of the top of the tube, without such restriction were the points brought by the essayist as was also the importance of the placental site.

The following case was presented:

Mrs. C., aged 29, mother of three children. Family history negative. Has had no serious sickness, no miscarriages. In June of 1903 she failed to menstruate, and felt that she was pregnant. At the usual July period, and at subsequent periods, also at irregular intervals, she noticed slight bloody discharges from the vagina, together with a leucorrheal discharge. At these periods she suffered some pain, and though this was some times severe, and at others moderate in amount, at no time could it be stated that it was agonizing in character. Her husband stated that he had on one or two occasions held her in bed on account of excessive pain. About November 1 she noticed a tumor in the right lower quadrant of the abdomen, and this she observed growing larger as time went on until she finally thought it could not be pregnancy but probably a tumor. She came under my observation about January 20, 1904, and entered

the Cottage Hospital on the 23d of that month, when the following condition was present:

On inspection the abdomen was seen to be generally enlarged, with a distinct rounded swelling in the right lower quadrant. Bi-manual examination revealed this to be apparently a hard immovable mass attached to a larger immovable rounded tumor mass occupying the median portion of the abdomen, with its upper border on a level with the umbilicus, a sulcus occuring between these tumors; also a smaller and softer tumor mass occupying the left lower quadrant low down and encroaching upon Douglas cul-de-sac. Auscultation revealed nothing. The usual signs of pregnancy were present. Under careful aseptic precautions a sound was introduced within the cervix and after passing up about three inches, it met with an obstruction. This examination was discontinued as it was feared that a fetus occupied the uterus, and as blood followed the sound on its withdrawal. The patient was returned to bed and put under close observation for a few days, when the nurse called my attention to something in the napkin, which on examination proved to be decidual membrane. The patient was then carefully prepared, and on the first of February was operated. The usual median incision was made and the following conditions quickly observed: the tumor mass in the right lower quadrant proved to be a very much enlarged uterus, dense globular and about seven inches in diameter, and attached to many strong adhesions posteriorly to the mass occupying the middle zone; the left tube was fully three-fourths of an inch in diameter and its fimbriae fixed in this large smooth-covered mass in its left lateral aspect. A loop of small intestine laid over the large tumor diagonally in its upper portion and was firmly fixed on it, having no apparent point of cleavage. On attempting to free this loop of intestine, the gestation sac (for such it proved to be) ruptured and the hemorrhage from the raw surface was excessive. The sac was then freely incised, after applying clamps to check the bleeding, and the head of a fetus was exposed to view. It was quickly removed, the cord tied and cut and the fetus found to be alive, but much deformed about the head and limbs from presure. It gasped feebly and expired in about ten minutes. Blood welled up profusely into the mouth of the gestation sac. I put my gloved hand down into the sac, and found the soft mass in the left lower and central region to be the placenta, which was attached to the pelvic floor. The removal of this was not attempted. The sac was packed firmly with gauze and its edges stitched to the peritoneum and fascia in the incision, the general peritoneal cavity being thus closed off. The placenta being left to detach itself piecemeal, and its removal left to a later period.

The patient had, as I failed to state, a temperature of 99 to 100 degrees F previous to the operation and she soon developed sepsis and died on the sixth day after operation.

The operation was done in the strictest aseptic manner, rubber gloves, re-sterilized dressings, etc., and every care exercised in the handling of the case afterwards, yet with a fatal issue.

Evidently this case was one of rupture into the broad ligament with splitting of its layers, and development of the fetus retro-peritoneally. A post was refused but I believe it would have demonstrated this. The left tube presented no evidence of rupture.

This operation I believe was the only proper one under the conditions here prevailing.

Dr. Sutton: I cannot acquiesce in the surgical treatment instituted in this case. It is possible that text books might be found that would give recognition to it, but I could not lend approval to it by silence.

The placenta should never be left in the abdomen. A placenta left in the uterus is with the greatest ease infected, and leads to sapremia. The possibilities of infection are much greater when the placenta is left in the abdomen, and therefore it should be invariably removed, and there is never justification for leaving it.

In such a case there is but one proper method of procedure, which I follow. First secure both uterine and ovarian arteries. This will prevent the oozing from the adhesions and from the placental site. Had this been done the removal of the placenta might have been then accomplished, without such embarrassing hemorrhage as the operator encountered.

If the adhesions prevent free access to the uterine arteries, it may be advisable first to split the uterus from the fundus, before being able to secure these vessels.

Very probably, and evidently, this was a case of rupture into the free peritoneal cavity, and a new sac was formed by the adhesion of intestines around the fetus, and it was not a case of retro-peritoneal development of the placenta. The adhesions of the coils of intestines prove this.

Dr. Collins: I have been much interested in hearing the report of this case, and especially commend Dr. Lucas for his candor in reporting a case ending fatally, an example some of the rest of us would do well to emulate.

There are two points usually to be noted as characteristic in the history of a case of ectopic gestation, and they are not lacking here. 1st, some irregularities of the menstrual flow; 2d, the pain.

It was my good fortune through the courtesy of Dr. Lucas to be present at this operation, and he has graphically described the situation. The tube had evidently ruptured between the folds of the broad ligament, and the fetus had developed here, dissecting up the peritoneum of the cul-de-sac and posteriorly. The lowest loop of this ilium lay over the gestation sac. The placenta lay deep in the pelvis below the fetus, spread out over the concavity of the pelvis and posteriorly. In ectopic gestation, the placenta is formed from the fetal envelopes and it obtains its nourishment from the tissues with which it comes in contact. Therefore I cannot see how one can say dogmatically that the tying of the uterine and ovarian arteries will control the hemorrhage. This is illustrated in Tuhol-

ski's case, (American Gyn. and Obst. Journal, 1901), where the fetus became attached to the under surface of the liver and the diaphragm. Surely ligation of uterine and ovarian arteries would not have availed here.

Dr. Collins quoted various authorities in the recent literature; the writers invariably were unanimous in the view that in the case of a fetus viable, after the sixth month, the operator must frequently be content with stitching the gestation sac to the incision, packing the placenta with gauze, and allowing it to detach itself.

It is a condition, and not a theory, that confronts us in these cases. The conditions found by Dr. Lucas in his case justified him fully in following the course which he did.

Dr. Miller: I cannot see how the ligation of the uterine and ovarian arteries will materially check the hemorrhage from a placental site situated outside of the distribution of these vessels. It occurs to me also, that, in such a case as this one, a bisection of the uterus and the necessary removal of the organ in order to reach the uterine arteries would unjustifiably multiply the dangers of the operation, and jeopardize the life of the patient.

SANGAMON COUNTY MEDICAL SOCIETY.

Regular meetings are held in Springfield the second Monday of each month at 8 p. m.
Membership 73.

Officers.

President ..... B. B. Griffith, Springfield
Vice President ..... S. E. Munson, Springfield
Secretary-Treasurer ..... C. P. Colby, Springfield
Directors, W. O. Langdon, R. D. Berry, C. R. Spicer

The society held its regular monthly meeting April 11, 1904, in the Supervisor's Room. Meeting called to order at 8:30 by President B. B. Griffith. There were 21 members present, the largest number since the banquet meeting in November.

Minutes of last meeting read and approved. Bills amounting to $3.25 were read and ordered paid. President Griffith reports poor prospects of obtaining a room in the new library building. The application of Miss Susan Merritt to read a paper on **Medical Gymnastics** at our June meeting was referred to program committee.

Dr. Geo. N. Kreider read a paper on the **Surgery of Tuberculosis of Bones and Joints.** He presented the subject from a practical standpoint, citing over forty cases in his own experience and illustrating the symptoms and treatment from these. He believes there is a tendency to call the majority of bone and joint affections tuberculosis, but the diagnosis should be properly made by exclusion. He advocates the use of the X-Ray and believes it his been extensively and favorably used, and also recommends the sunporch. The treatment he thinks should be conservative to a certain point. In cases of hip disease where operation was necessary he has had better results with amputation than excision. In cases of cavities of the bone after evacuating and curetting use iodoform emulsion, or plug, with amalgam containing iodoform. In spinal, hip and other joint cases where the pressure can be relieved either by splints or plaster casts with plenty of fresh air and sun light the results are often remarkable. The discussion was opened by Dr. Hopkins and participated in by most of the members present.

Dr. O. F. Maxon read a paper on **Tuberculous Family History in Relation to Life Insurance.** Just as tuberculosis is the scourge of the general population of all civilized countries, so it is the principal cause of mortality in the experience of life insurance companies. The Mutual Life of New York found that consumption caused 17.61 per cent of the total mortality. The Washington Life Insurance Company reported that it caused 17.65 per cent of the total mortality and the Australian Mutual Provident Society stated that the deaths from phthisis were 12.73 per cent of the total mortality.

Craig (Journal of Am. Med. Association, 1902) stated that: It has been recently estimated that there are one million cases of active tuberculosis in the United States, and the latest authentic statistics show that 14 per cent of the deaths recorded for ten years are due to some form of tuberculosis. The tabulated results of consecutively made post mortems are still more appalling as revealing its frightful preponderance over all other pathological conditions. In 100 consecutive post mortems 65 per cent showed tuberculosis. However the deaths caused directly or indirectly by tuberculosis, is a very small part of the number actually affected by this disease, it can almost be considered a universal condition.

In view of these facts, life insurance companies have adopted a more liberal policy, and their present rules differ considerably from those which they formerly had. As a general statement, it may be said, that a person who is suffering with an evident tuberculous lesion, is not eligible for the standard plans of ordinary policies. On the other hand, however, persons in whom there has previously existed a tuberculous lesion, but which has after a number of years shown evidence of probable permanent quiescence may be accepted for certain policies upon a premium sufficient to cover the hazard. Those persons of middle age, giving a history of early local tuberculosis involvement of glands or bones which have since given evidence of permanent recovery, either spontaneously or by operation, and who are standard weight and well nourished, should be considered as first-class risks. The greatest questions involved in the consideration of tuberculosis and life insurance have been along the lines of heredity, and contagion from contact. You can understand how impossible it is to ascertain as to whether exposure to the disease has resulted in infection. The action of the companies in treating such cases, in which there is a history of exposure from a resident in the same house, or where the applicant has nursed such a person, varies from rejected to postponement for from one to five years to await development. As to the transmission of tuberculous tendencies of heredity, Dr. E. J. Marsh, of the Mutual Life of New York, made a study of twenty-two

thousand cases, which was the mortality of that company for a period of fifteen years.

As a result of this investigation he came to the following conclusions:

1st. That the history of consumption in any member of the immediate family increases the probability of its appearance in an applicant.

2d. That consumption in a brother or a sister is at least of equal importance as when it has occurred in a parent.

3d. That persons who are under the average weight are much more liable to consumption than those above. That the peculiarity of constitution which is indicated by the inability to take and assimilate a proper amount of nutriment indicates a susceptibility to phthisis, or at least is a reasonable suspicion of such predisposition.

4th. That persons who exhibit a robust and well developed body have little susceptibility to consumption.

5th. That the personal condition or weight and robustness has far more value than family history in diminishing the liability to consumption.

6th. The evidence presented by a well developed body may outweigh the suspicion attached to unfavorable record.

7th. That these influences of family history and personal weight are of the same grade for every age, and their importance is not lessened by the fact that the individual has reached middle life.

The result of this investigation disproves the old idea that persons of tuberculous families can out grow the susceptibility to the disease upon attaining middle age. The fact that the mortality was the same for cases giving histories of tuberculosis in a brother or sister, as when it had occurred in the parents, is still more remarkable. The strongest argument in favor of the belief in the hereditary transmission of the disease, has been the frequency with which tuberculosis is met with in the descendants of those affected. If we are justified in assuming that conclusive proof of the hereditary character of tuberculosis is wanting, the question of the importance of tubercular family history is of value only as a warning to the medical examiner to make a thorough search for hidden foci. It is not too much to expect that the day is not far off, when we can hope to see that great host of individuals who are at present debarred from insurance privileges, through the misfortunes of ancestors, accepted without hesitation as desirable risks, with profit to the insurer and to the insured.

Adjourned.

THIRD COUNCILOR DISTRICT.

A meeting of the secretaries of the county societies in the third councilor district was held in Galesburg, Illinois, March 18th, under the auspices of the Knox County Medical Society. Dr. J. F. Percy, councilor for this district, presided at the morning and afternoon session, while Dr. R. C. Matheny, president of the Knox County Medical Society, presided at the banquet held in the evening.

Dr. J. N. McCormack of Bowling Green, Ky., General Organizer of the A. M. A., was present, and made an address in the afternoon. There were also present Dr. John A. Koch, Quincy, secretary of the Adams County Medical Society; Dr. M. T. Ward, Toulon, secretary of the Stark County Medical Society; Dr. A. N. Mackey, Aledo, secretary Mercer County Society; Dr. J. B. Holmes, Macomb, secretary McDonough County Society; Dr. G. S. Bower, secretary Knox County Society; Dr. F. E. Wallace, Monmouth, represented the Warren County Society in the absence of Secretary Dr. E. J. Blair; Dr. C. B. Horrell, Galesburg, secretary of the Military Tract Medical Society. Drs. S. M. Miller and C. U. Collins, the former the present and the latter an ex-secretary of the Peoria County Society, were present by invitation.

The meeting was called to order at 10 A. M. by Dr. Percy. After stating the object of the meeting, the chairman read a telegram from President Black of the State Medical Society, expressing his regret at not being able to attend the meeting, owing to personal illness.

The greater part of the morning session, and the early part of the afternoon was taken up with a report from the secretaries of the various county societies present as to their experiences and difficulties in maintaining the life and work of their respective organizations. The reports made an interesting symposium on county medical organization in general. One of the most prominent facts brought out was that of general professional apathy toward medical organizations, on the part of medical men. The explanations dealing with this state of affairs, and the remedies, were numerous and good. A curious phase of the question of medical organization was the one reported by two or three of the secretaries present, viz.: That some of the members of their organization did not care to have membership in the county society entitle them also to membership in the state organization. It was the general consensus of opinion, however, considering matters medical from the standpoint of the present and past, that there had been a distinct and decided improvement.

During the afternoon, Dr. S. M. Miller of Peoria, read a most interesting and instructive paper entitled: **Pathology of Varicose Veins in the Broad Ligaments.** Following Dr. Miller's paper was an address by Dr. J. N. McCormack on **The Difficulties and their Cure in the Organization of County Medical Societies.** Dr. McCormack based his remarks on the reports which he had previously heard from the county secretaries present at the meeting. It is difficult to give an adequate report of Dr. McCormack's address. In the hour and a quarter during which he had the floor, the ills of the medical profession were completely diagnosed, and the treatment thoroughly and clearly laid down. An interesting feature is that, following the Doctor's address, all the comments on it by those present were to the effect that there was nothing impracticable in the suggestions

made for the raising of the professional standard among the physicians themselves. It was a general matter of regret that more physicians could not have heard this "Apostle of Organization" in his presentation of the newer things in medical and professional organization.

In the evening a banquet was served by the Knox County Medical Society to the visiting physicians. Twenty-six medical men were present. In the absence of Dr. McCormack (who was called home by a telegram because of illness in his family) addresses were made by Dr. Louis Becker of Knoxville, ex-president of the Knox County Society; Dr. L. R. Ryan of Galesburg, and Hon. Wesley Holt, city attorney of Galesburg. After these addresses, which dwelt on the relationship of professional men to each other, the meeting was thrown open by President Matheny to everyone present. This resulted in short addresses from every physician, and added greatly to the enjoyment of the evening.

G. S. Bower, Secretary.

DOUGLAS COUNTY MEDICAL SOCIETY.

Regular meetings are held in Tuscola the first Thursday of February, May, August and November. Membership 27.

Officers.

President ..... C. F. Voyles, Murdock
Secretary ..... Walter C. Blaine, Tuscola

The Douglas County Medical Society met in regular session in the K. of P. Hall, Tuscola, on February 4, 1904. The following members were present: Drs. Reat, Rice, Brenton, Voyles and Blaine. The President Dr. Voyles of Murdock called the meeting to order.

The following applications for membership in the Society were read and referred to the Board of Censors who reported favorably on all of them. Drs. Lockwood of Atwood, graduate of the College of Physicians and Surgeons, Chicago, 1902, Harper of Villa Grove, graduate of the Indiana Medical College 1897, and Alexandra of Oakland, graduate of the Kentucky School of Medicine, 1894. The fee bill as corrected by the Committee was then read and adopted by a full vote of those present.

The following resolution was then introduced:

Resolved, That the Secretary of this Society forward to the State Medical Society the money paid him by the individual members of this Society for membership in the State Society and that the aggregate amount thus forwarded shall constitute the sum total of the claim of the State Society on this the Douglas County Medical Society.

This resolution was passed by the unanimous vote of the Society. On motion the President appointed a Committee of five consisting of Drs. Brenton, Rice, Ewing, Allen and McNeil to arrange ways and means of holding a banquet at our next annual meeting held in May. It was then moved and seconded that this Society favor the plan of making a protective feature in the Membership of the Illinois State Medical Society against persecution and prosecution of claims for mal-practice and blackmail against physicians holding membership in the State Society. The motion carried by full vote.

An excellent paper was then read by Dr. Reat entitled "Should we ask for such a Law?" It was received by the Society and discussed by the members present. Dr. Hall's paper was then read by title and referred back to him to be read at a future meeting. As the hour was late the Society adjourned to meet the first Thursday in May.

ADAMS COUNTY MEDICAL SOCIETY.

Regular meetings held in Quincy the second Monday of each month at 2 p. m. Membership 70.

Officers.

President.....L. H. A. Nickerson, Quincy
1st Vice-President.....John A. Koch, Quincy
2d Vice-President.....J. M. Grimes, Camp Point
Secretary.....G. E. Rosenthal, Quincy
Treasurer.....R. J. Christie, Jr., Quincy
Censors.....C. D. Center, Chairman, Quincy
Jos. Robbins, Quincy; L. B. Ashton, Quincy.

The regular monthly and annual meeting of the Adams County Medical Society took place in the Chamber of Commerce Rooms April 11th, W. W. Williams presiding.

The following members were present: Drs. Ashton, Burch, Byers, Center, Christie, Jr., Knopheide, Knox, H. J. Nichols, Nickerson, Pfeiffer, Rosenthal, Sigsbee, Vasen, J. G. Williams, W. W. Williams and John A. Koch.

The secretary reported the proceedings of the meeting of the secretaries of the counties in the 3rd Councilor District of the State Society held in Galesburg, March 18th, which the secretary was instructed to attend. At the morning session reports were given from the secretaries of the various counties. In the afternoon National Organizer Dr. MacCormack of Bowling Green, Ky., gave a very interesting address on the benefits of medical organization. In the evening a banquet was given by the Knox County Medical Society.

The Annual report of the secretary was given:

To the Adams County Medical Society:

I herewith respectfully submit the secretary's annual report:

Balance reported on hand April, 1903, in the treasury	$142 66
Money received since the last annual meeting	256 00
Total	$398 66
Authorized expenditure since last annual meeting	$294 52
Balance	$104 14

During the past year there were 11 meetings. The average attendance was 11. Three applications were received. One applicant elected. Two applications are in the hands of the censors. Five essays were given and ten clinical reports.

A census of the physicians in the county was taken during the past week and the results are as follows:

In the city there are 77; outside of the city 51; total 128. Members of the society in the

city 47 active, and 3 honorary; members outside of the city 18; total 68.

John A. Koch, Secretary.

The annual report of the Treasurer, L. H. A. Nickerson is as follows:

Balance on hand April 1903	$142 66
Money received from the secretary since last annual meeting	256 00
Total	$398 66
Paid out on vouchers	$294 52
Balance on hand	$104 14

The officers were elected for the ensuing year as above.

John A. Koch gave a clinical report and presented a case of **Huntington's Chorea.**

A Case of Huntington's Chorea.

I wish to present to the society a patient from my service at St. Mary's Hospital. This patient as you see, shows very peculiar muscular movements, performing involuntary movements of the head, arms and hands. The moment an attempt is made to arise from his seat, these movements become greatly exaggerated, and most peculiar distortions of the face are made when he protrudes his tongue. His speech is altered in consequence of muscular movements of the bucal cavity, pharynx and respiratory diaphragmatic muscles, and imparts to the speech a nasal, confused, obstructed and sticky articulation. He is unable to point his finger to the nose without making a series of zigzags. The muscles of the lower limbs are at times affected, causing a halting and staggering gait. Patellar reflex is present and not exaggerated. By making a great effort he can control to a great extent these muscular movements, but as a rule they then recur with greater intensity. During sleep he is perfectly quiet. The memory is good if given time to think.

This condition shows plainly a form of chorea first described by an American named Huntington, a physician of Long Island, and the disease is known by his name, also called Chronic Progressive Chorea.

It differs from Sydenham's Chorea in that the muscular movements are of longer range and whole groups of muscles being set into action as in a voluntary movement. In Sydenham's Chorea the muscular movements consist of fibrillary contractions that are jerky, beginning quickly and ending quickly.

It also differs from the regular Chorea by its seldom occurrence before the 30th year, hence often called Latent or Tardy Chorea. This case is of especial interest because there is an entire absence of family history of the disease. He is 46 years of age and was born in Wisconsin. Married, but has no children. His father died of typhoid-pneumonia aged 52. Mother died at about the age of 30, cause unknown, the patient being but two years of age when she died. None of his brothers and sisters now living are afflicted as he is. In 1891 he contracted syphilis. This condition of chorea came on him suddenly in August, 1895, while walking. He suddenly noticed he could not speak and thought it was the beginning of a paralysis. A feeling of great weakness seized him and became unconscious, remaining so for several hours. Contrary to the usual history of these cases, his condition at present and for some time past is better than it was in the beginning, but it seems now to remain stationary. The patient is able to work, he laying claim to the title of "Wire King of America." Heredity is a very factor in Huntington's Chorea, and in this sporadic case there is probably some choreic family tendency which is not determinable. Syphilis, however, may be no small factor in this case. His general health is little or not affected, he is in a well nourished condition, in good spirits and says he feels well.

A study of this disease will convince one readily that there is a big difference between it and Sydenham's Chorea which is seen so often and easily cured. Huntington's Chorea is a disease of the cerebrum, while regular chorea is a neurosis. There is no united opinion as to the exact pathology, but the concensus is that the cortical and sub-cortical substance of the brain are effected, the locality however, varying.

The prognosis is unfavorable. It is an incurable disease. We know of nothing that will stay its progress. The mental condition becomes gradually impaired.

The treatment consists in the administration of Fowler's Solution, Bromides, Hyoscine and the Galvanic Electricity.

Discussion by Drs. Byers, Rosenthal, J. G. and W. W. Williams.

President named the following committee on Program and Scientific Work: G. E. Rosenthal, Chairman, Sarah Vasen and John A. Koch.

The following members, according to chapter V of the by-laws, stand suspended on account non-payment of dues at the annual meeting: W. H. Baker, H. O. Collins, Grant Irwin, W. E. Miller, E. H. Toole, A. D. Bates, L. L. Gill, S. B. Jarrett, J. H. Pitman, S. J. Wilson, H. P. Beirne, H. M. Harrison, D. M. Landon, W. G. Schmidt, R. Woods.

Adjournment.

John A. Koch, Retiring Secretary.

EAST ST. LOUIS MEDICAL SOCIETY.

Regular meetings are held every two weeks. Membership 30.

Officers.

President	C. F. Whitmer
Secretary	C. W. Lillie
Treasurer	W. H. McLean

The East St. Louis Medical Society met in regular session on April 18, 1904, with President Hanson in the chair, and C. W. Lillie, secretary, and the following members present: Rendleman, Campbell, Nifong, Hertel, Thompson, Wiggins, Voris, Wiatt, and Adams.

Minutes read and approved.

The committee appointed at a former meeting to draft resolutions regarding the financial interests of the profession reported with a recommendation that all physicians of the city organize a Physician's Protective Association on a purely business basis, and that each member of the society be made a committee to solicit other physicians to join such an organization. The report of the committee was accepted, and in accordance with the suggestions in the re-

port a special committee to draft suitable by-laws for the new organization was appointed, the committee being constituted as follows: Lillie, Adams and Wiggins.

Edward Lewis, the man with the so-called "musical heart," was present and was examined by all the members present.

The committee appointed to devise some means to prevent druggists from prescribing made a report recommending that a list of all those who are violating the law be sent to the secretary of the State Board of Health, and those present handed in the names of such as had been known to be habitual violators of the medical practice act.

Campbell read a paper on **Peritonitis** which proved to be a very interesting feature of the meeting, and which was discussed by several members.

Society adjourned.

FAYETTE COUNTY MEDICAL SOCIETY.

Regular meetings are held quarterl yat Vandalia. Membership 14.

Officers.

President.....E. W. Brooks, St. Elmo
Vice-President.....M. Haynes, Bingham
Secretary.....A. L. T. Williams, Vandalia
Treasurer.....H. D. Smith, Vandalia

The Fayette County Medical Society met in Vandalia April 13th. Baxter Haynes of the Montgomery County Medical Society, one of the oldest and most successful physicians of southern Illinois was present and made an address on **medical ethics** and the benefits to be derived from the county organizations. The doctor's talk was full of good things and was enjoyed by all those present.

Dr. F. Buckmaster of Altamont read a paper on **a brief consideration of the sexual instinct and how influenced directly and indirectly by dancing.**

F. G. Rewann, L. L. B. read an instructive paper on **the expert witness.**

Dr. J. H. Wallace was elected to membership and Dr. M. E. Keppner was granted permission to join the Effingham County Society.

The annual election of officers resulted as above:

There being no further business the Societ, adjourned.

DEWITT COUNTY MEDICAL SOCIETY.

Regular meetings are held in Clinton on the second Tuesday of January, April, July and October. Membership 25.

Officers.

President.....John H. Tyler, Clinton
Vice-President.....G. M. Robertson, Wapella
Secretary and Treasurer..A. E. Campbell, Clinton
Delegate to the National Association.G. G. Dowdall
Delegate to State Meeting.....J. C. Myers
Censors..J. C. Myers, J. M. Wilcox and .....D. W. Edmiston

The DeWitt County Medical Society convened in annual session in the county court room April 12, 1904, at one o'clock P. M. Pres. J. C. Myers in the chair.

Symptoms of **smallpox** was discussed. Dr. G. G. Dowdall said he knew of no eruption occurring on the palms of the hands and the soles of the feet except in smallpox.

Dr. Spaulding reported a case of **malarial fever,** of a peculiar character which did not yield readily to quinine—in a young man who had just returned from Hot Springs.

Dr. G. S. Edmonson reported a case of **pneumonia followed by gangrene of the lungs** which is now convalescing. All members participated in a discussion of same.

Dr. D. W. Edmiston read a paper on **Man vs. Vitalization,** giving an extensive view of the geological formation of the world through its different periods until oxygen was the prevailing element after which man made his appearance.

On motion the society proceeded to elect officers for the ensuing year which resulted as above.

The society adjourned to meet the second Tuesday in July.

CHRISTIAN COUNTY MEDICAL SOCIETY.

Regular meetings are held at Taylorville. Membership 20.

Officers.

President.....W. T. Bridges, Stonington
Vice-President.....Matt Hill, Taylorville
Secretary and Treasurer...F. E. North, Taylorville
Directors.....C. L. Carroll and G. L. Armstrong. Taylorville; M. W. Staples, Grove City.

The above named officers were elected at a meeting held at Taylorville, April 15th.

PULASKI COUNTY MEDICAL SOCIETY.

Regular meetings are held in Mound City the first Tuesday in January, April, July and October. Membership 16.

Officers.

President.....W. C. Rife, Villa Ridge
Vice-President.....C. J. Boswell, Mounds
Secretary and Treasurer..A. W. Tarr, Grand Chain

At our last regular meeting held on April 5th, Dr. Hall Whitaker of Mound City read a valuable paper on **the treatment of abortion** which was discussed by most of the members present.

Dr. M. L. Winsted had a lengthy paper on **Radium** which was much enjoyed.

The prevailing diseases in our county this spring are pneumonia and measles.

Am glad to report a good attendance at our meetings and harmony among the physicians of this county.

WASHINGTON COUNTY MEDICAL SOCIETY

Regular meetings are held at Nashville on the second Thursday of April and October. Membership 13.

Officers.

President.....J. J. Troutt, Nashville
Vice-President.....R. E. Vernor
Secretary.....David S. Neer
Treasurer.....S. P. Schroeder

The Washington County Medical Society met in regular session at B. B. Holston's office in Nashville. The president and vice-president being absent, Dr. David S. Neer of Beaucoup presided. After reading the minutes of the preceding meeting and a communication from

the committee of the American Medical Association on Medical Legislation the Society proceeded to elect officers for the ensuing year. See above.

The Society voted to hold two meetings a year instead of four. The meetings to be held the second Thursday in April and October. George S. Hays of Oakdale was elected to become a member of the society. Dr. W. D. Carter read a very interesting paper on **Traumatic peritonitis** and reported four cases from memory. Dr. R. A. Goodner made a verbal report on the **treatment of gonorrhoea by the use of Argyrol.** He claimed the results were more satisfactory than any treatment he had used before. Dr. S. P. Schroeder reported a case of **rheumatism in connection with abscess of the thigh.** The doctor believes the absorption of certain products of the streptococcus will produce rheumatism.

CASS COUNTY MEDICAL SOCIETY

Regular meetings are held quarterly on the third Wednesday of January, April, July and October. Membership 20.

Officers.

President.....M. J. Palmer, Beardstown
1st Vice-President.....L. M. Sinker, Ashland
2d Vice-President.....C. J. Koontz, Beardstown
Secretary.....J. A. McGee, Virginia
Treasurer.....J. G. Franken, Chandlerville

The Cass County Medical Society met in Virginia, Wednesday afternoon April 13th for its annual meeting, but owing to press of business among the members, but few were present. The order of business was gone over, several of those present making some remarks in regard to cases seen, and under treatment. The election of officers resulted as above.

Dr. Franken, treasurer, report was read showing a balance of $26.71 in the treasury. The next meeting will be held in Beardstown, for which plans are already on foot to induce members to attend the meetings more regularly, and it is hoped that much may be accomplished in this line

ROCK ISLAND COUNTY MEDICAL SOCIETY

Regular meetings are held monthly at Rock Island on the second Tuesday. Membership 56.

Officers.

President.....L. D. Dunn, Moline
1st Vice-President.....G. A. Wiggins, Milan
2d Vice-President.....W. L. Ludewig, Rock Island
Secretary.....T. J. Lamping, Moline
Treasurer.....L. Ostrum, Rock Island
Official Reporter.....F. H. First, Rock Island

The regular meeting was held at the Harper House, Rock Island, April 12, 1904. Twenty-nine members being present. This being the annual meeting the officers were elected for the ensuing year. See above.

Dr. W. R. Freck of Cordova, the retiring president, was elected delegate to the State Medical Society, with Dr. L. D. Dunn of Moline, as alternate. After the election the society had the pleasure of an address by Dr. Carl Black, of Jacksonville, president of the State Society, who took for his subject **Medical Organization.** He spoke of the early State Medical Society and the advantages and influence of the present state organization.

Following Dr. Black's remarks was an address by Dr. J. F. Percy of Galesburg, counselor for the societies in this district, who spoke on **the advantages to physicians in organization.**

The addresses of Dr. Black and Dr. Percy were very much enjoyed by the society.

The following resolutions were adopted:

Whereas, The Rock Island County Medical Society hears with regret the death of Dr. Charles C. Carter, a highly respected member of our society, who in his profession stood deservedly high and was universally respected by all who knew him; therefore, be it

Resolved, That the profession has lost one of its best and most competent practitioners and a conscientious friend of this society.

Resolved, We tender our heartfelt sympathy to the members of his family and mourn with them a loss which cannot be expressed by words.

Resolved, That these resolutions be spread in full upon the minutes of this society and a copy be forwarded to his family.

The next meeting of the society will be held the second Tuesday of June.

F. H. First, Official Reporter.

HANCOCK COUNTY MEDICAL SOCIETY.

Regular meetings are held at Carthage the first Monday of January, April, July and October. Membership 24.

Officers.

President.....C. A. Runyon, Elvaston
Vice-President.....J. H. Callahan, Carthage
Secretary.....R. L. Casburn
Treasurer.....R. R. Loomis, Burnside
Censor.....C. L. Ferris, Carthage

The Hancock County Medical Society met in the north jury room in court house, Monday, April 4th, at 1 P. M. Members present: Dr. Reaburn, Nice, Callahan, Ferris, Jenkin, Ellis, Loomis, Yarnell and Casburn. Dr. W. P. Frazier present and united with the society by card from the Fulton County Medical Society. Drs. Roberts, McCormick, J. A. Miller, C. R. Hecox, S. R. Denton and G. W. Fegers also present, and were elected to membership in regular form. Dr. Wm. Rankin, of Basco present and petitioned for membership.

Committee on hospital reported that the society had been incorporated and measures taken by which it was hoped that funds would be raised for the construction of the hospital. Report received and committee continued.

In the matter of **a pure food bill** now pending before the United States senate, resolutions were passed commending the bill and instructing the secretary in the name of the society to write to Senator W. B. Heyburn, chairman of the committee that has the bill in charge, and to both our United States Senators, urging them to use their influence to secure the passage of the bill.

Dr. Reaburn read a very interesting paper on the **history of the society.** After discussing

many matters of interest the society adjourned to meet again, the first Monday in July.

Dr. Reaburn offered the following resolutions which were adopted:

In Memoriam.

At a meeting of the Hancock County Medical Society, held in Carthage April 4, 1904, the following preamble and resolutions were reported and adopted:

Whereas, Dr. Jas. W. Carlton, Dr. R. J. Grigson, Dr. David Ellis, and Dr. Virgil Kingsley, who were honored and esteemed members of this society, have answered the last call and gone to their respective rewards.

Resolved, That in the death of these worthy members of this society, the medical profession and the communities in which they moved have sustained a great loss, that they were recognized as physicians of skill and ability, that we desire to inscribe on the records our deep sorrow and tributes to their memory, that we extend words of condolence to their respective families in their abiding bereavement.

Resolved, That a page on the records be set apart for these resolutions.

HAMILTON COUNTY MEDICAL SOCIETY.

Officers.

President ..... H. E. Hale
First Vice President ..... I. M. Asbury
Second Vice President ..... Harry W. Dale
Secretary and Treasurer ..... C. M. Lyon
Board of Censors: W. W. Hall, J. J. Hassett and Inman Hall.

The Hamilton County Medical Society met in regular session, Tuesday, April 19th, at the office of Dr. I. M. Asbury in McLeansboro. Present: Drs. H. E. Hale, President, W. W. Hall, I. M. Asbury, J. J. Hassett, Harry W. Dale, and C. M. Lyon, Secretary. Minutes of last meeting read and approved. On motion of Dr. J. J. Hassett, Dr. Inman Hall was elected a member of the society. Officers for the ensuing year were elected as above.

The President appointed as a board of censors, Drs. W. W. Hall, J. J. Hassett and Inman Hall.

Interesting cases were reported by Drs. Hale and Hassett, and discussed by Drs. Asbury, Inman, Hall and H. W. Dale. On motion the society adjourned to meet at Dahlgren on the second Tuesday in July, at one o'clock P. M.

C. M. Lyon, Secretary.

GALLATIN COUNTY MEDICAL SOCIETY.

Regular meetings are held the second Wednesday of each month. Membership, 16.

Officers.

President.....I. N. Bourland, Equality
Vice-President.....I. A. Foster, New Haven
Sec'y and Treasurer..W. H. Grattan, Shawneetown

Society met at Ridgway, April 14. Minutes of last meeting were read and approved, after which Paul Sherman was elected a member.

There being no papers to read interesting subjects were discussed. On motion a committee of two, consisting of a Democrat and Republican, was appointed to confer with our law-makers on all matters in which the medical profession is concerned and that the committee and each member as well pay especial attention and use all their influence for the passage of "Heyburn's Pure Food Bill."

Meeting adjourned to meet at Omaha second Wednesday in June.

EAST ST. LOUIS MEDICAL SOCIETY.

Officers.

President.....H. Hanson
Vice-President.....C. A. W. Zimmermann
Secretary-Treasurer.....C. W. Lillie
Censors.....Campbell, Hertel and Bottom

The East St. Louis Medical Society met in annual session on April 4, 1904, President C. F. Whitmer in the chair, and C. W. Lillie, secretary. Roll call showed the following members present: Campbell, W. S. Wiatt, Collins, Zimmermann, Bottom, Hanson, Hertel, Stanton, Wiggins and Voris.

The report of the secretary and treasurer was read and on motion accepted.

The committee appointed at a previous meeting to report a means to prevent druggists prescribing was not able to report.

President Whitmer announced election of officers for next order of business and appointed Hertel and Campbell tellers. The officers were elected as above.

Moved by Lillie, seconded by Campbell, that all members who are in arrears for dues for two years or more, and who have not attended a meeting of the society in the past year, or have removed from the city, be dropped from the roll of membership. The motion prevailed.

Dr. Wiggins made a very interesting report of a case of ectopic pregnancy in which a secondary operation was done for severe pain in region of original operation. No good results followed as no cause could be found to account for the condition except a peritonitis, to which the trouble was then attributed. The abdomen was closed and a few hours later the patient died. At autopsy it was found that there was a stricture at about the distal termination of the duodenum, although there was almost as much distension below as above this point, a condition rarely met with in intestinal constriction or obstruction.

Dr. Campbell is to present a paper on peritonitis at the next meeting.

Society adjourned.

C. W. Lillie, Secretary.

New Incorporations.

Radams Microbe Killer company, Chicago; dissolved.

The Secretary of State at Springfield licensed the following corporations:

Vapor Medicator company, Chicago; capital increased from $2,500 to $10,000.

The Ma-Jes-Ca company, Chicago, $5,000; manufacture and sell medicines; Mabel T. Mallette, Jessie Louise Elliett, and Willard E. Carpenter.

The Fred B. Hargreaves company, Dwight; $2,500; maintain hospitals and sanitariums; William H. Ketchum, Clyde H. Thompson, and George L. Taylor.

First National College of Human Nature, Chicago; capital, $1,000; teaching vitosophy, optometry, ophthalmology; incorporators, Henry Krause, Emma J. Steinfurth, Robert H. Smith.

Marriages and Deaths.

Marriages.

J. C. McEnery of Jacksonville and Miss Mary Milligan of Chicago, April 7th.

Geo. A. Potter and Miss Mae Belle McCoy, both of Danville, April 8th.

Thomas W. Priest of Buffalo Hart and Miss Lucy M. Burns of New Berlin, April 14th.

Victor H. Rimerman of Lincoln and Miss Estel R. Daviess of Pekin, April 5th.

Kellogg Speed and Miss Bertha A. Brown, both of Chicago, April.

Deaths.

Carter, Chas. C., Rock Island, April 2, aged 52. Dr. Carter was sick with pneumonia only six days. He was Asst. Surgeon General of the Illinois National Guard.

Goold, Birney R., Chicago, March 29, aged

Heller, Wm. H., Abingdon, April; aged 82. Dr. Heller had practiced medicine in this State 58 years.

Higgins, John, Crown Point, Indiana. Dr. Higgins was surgeon of the Twelfth Illinois Infantry during the civil war.

Kerr, Chas., Springfield, April 13, aged 67. Dr. Kerr served as assistant surgeon of the 59th Illinois Infantry. He was a member of the Lower House in the 34th General Assembly and a candidate for Congress in 1888.

Prescott, Elmer E., Chicago, April; aged. Dr. Prescott died in his hospital at Des Plaines and Washington sts., from an overdose of atropine.

Schottenfels, Emil, Chicago, March 31, aged.

Skelly, John I., Pekin, April 10, aged 59. His death was due to apoplexy.

Stringer, Charlotte T., Chicago, April 1, aged.

OBITUARY.

IN MEMORIAM.

Dr. Charles Crawford Carter, of Rock Island, Ill.

Perhaps the saddest moments which come to us in this brief span of mortal life are those when death comes to break the ties which life and association have woven into bonds of personal love and friendship. The realization of this thought comes most profoundly to those of us who have been most intimately associated with our late confrere and colleague, Dr. Charles Crawford Carter whose untimely death but a few days ago, so shocked the community in which he lived.

Charles Crawford Carter was born in San Francisco, Cal., December 20, 1852, the son of Elijah and Ann Maria Whitney Carter. His father was a native of Vermont, his mother of Massachusetts, both descendants of that rugged stock of Puritans who early settled on the New England coast.

His father was one of the Argonauts of '49, going to seek his fortune in the golden sands of California, it was during the residence of his parents there that he was born. When he was about three years of age, having been quite successful in their search for fortune his parents removed to Rock Island, Ill. Where he grew to early manhood, when he took up the study of medicine. His preliminary education was public school and academical.

He began the study of medicine in 1873, as a pupil of Dr. James Orne Whitney, of Pawtucket, Rhode Island, his uncle, a practitioner of the old school, who looked upon his work as a profession not a business, and whose dignified precepts and example no doubt had large influence in forming that high sense of professional honor and courtesy which so markedly characterized Dr. Carter in his relations to his patients and confreres.

He graduated in 1876, from Bellevue Hospital Medical College, New York. Some ten years afterwards, when his years of practical experience made him peculiarly capable of absorbing and assimilating the instruction given he took an extended Post-Graduate Course in New York.

He was married to Mary Whitney of Pawtucket, Rhode Island, in 1887. To him and wife there were born six children, four of whom died in early infancy. Two surviving their father's death, Richard, thirteen years of age, and Crawford, seven. Of his immediate family there also survives his wife, two sisters and one brother.

Dr. Carter was a member of the American Medical Association, Illinois State Medical Society, Rock Island County Medical Society and various other special Medical Associations, at whose meetings he was a frequent and regular attendant.

He was early identified with the National Guard of Illinois and served as surgeon in that organization for more than twenty years, being at the time of his death and for a number of years preceding Assistant Surgeon General, Illinois National Guard.

He began the practice of medicine in Rock Island, Ill., in the spring of 1876. It was here that the writer also just beginning his professional career in the same city first made his acquaintance. That acquaintance first made in the flush of youthful hope and endeavor, ripened through the years of personal and profes-

sional association into a warm friendship that no friction ever disturbed.

The writer believes that he can pay no higher tribute to Charles Carter's professional character than to say that in the twenty-eight years of his professional life he never knew him other than a high minded, upright and conscientious physician whose conduct to his brother practitioners seemed largely founded upon those admirable principles of the Golden Rule, that unfortunately so few have the courage to follow.

As a practitioner, Dr. Carter was astute in diagnosis, careful, judicious, painstaking and successful in treatment. His opinions were rapidly but accurately formed and showed a breadth of knowledge indicative of his devotion to his profession.

To his patients he was always the kind and genial gentleman which endeared him to the many whom his pleasant smile had lighted through the dark valley of pain and sickness.

In his private life his friends will miss him much, for he had many friends. He was a man singularly attractive and of singular sweetness of disposition and of a most liberal spirit.

He was an interesting talker and in his conversation he showed much familiarity with many and diverse subjects. He was a good friend and one whose friendship never faltered. He was strong in his feelings and convictions, but thoroughly honest in his expressions of them and his heart was full of charity for all.

It will be hard to fill the void that he has left, but all who have shared his friendship must feel that his life has added to their happiness and that his memory can never fade. After all what greater honor, what more noble title may a man attain than that of the family physician. Perhaps at times misunderstood and undervalued, but in the end loved and honored by the grateful hearts of those to whom he has brought the healing power of medicine.

Charles Crawford Carter.

"No laurel decks thy brow, but when thy spirit true,
Thy comrades showed the way to live and do
There lies thy form enthroned in every heart
There, thou art still and hast, in life a part.
On the low couch within the chamber dim,
A sufferer waits the last long struggle grim,
Thou comest it is light, and sorrow disappears,
Pain is forgotten, hope replaces fears.
So happy makes thy face, so brave thy kindly glance
The touch of thy loved hand brings ease and confidence,
And, what with sordid gold can not compare,
The tears of gratitude reward thy care."

—George L. Eyster.

The Illinois Medical Journal.

Special Section Containing Official Reports of the Chicago (Cook County) Medical Society and its Branches.

OFFICERS:

R. B. PREBLE, 103 State Street..... ..... President
FRANK X. WALLS, 4307 Ellis Avenue.....Secretary
A. E. HALSTEAD, 2937 Indiana Avenue..... .....Treasurer
W. A. EVANS, 103 State Street ..... Chairman Medicolegal Committee
WM. HARSHA, 103 State Street .....Chairman Membership Committee

MAY, 1904.

The Chicago Medical Society met in regular session March 16th.

On the Accessory Sinuses.

W. T. Eckley: The accessory sinuses in man, occupy the pneumatic bones. In the lower animals, pneumatic bones are subsidiary organs of respiration, hence phylogenetically, the sinuses in man are respiratory.

In the lower animals, the pneumatic bones receive air in proportion to the functional activity of the related parts, hence they are to be regarded as special respiratory organs for these parts. In man the pneumatic bones are in the head, hence the accessory nasal sinuses of man, are to be regarded as special respiratory organs for this region.

In the amphibia, the accessory nasal chamber—homologous with the maxillary sinus of all vertebrates—contains a part of the olfactory organ, hence in man the maxillary sinus may be regarded as a phylogenetic olfactory organ.

In birds and mammals, the sinuses are absent at an early stage of life. In adult birds, the sinuses impart tone and strength to song, hence as mating factors in birds, the sinuses are subsidiary to procreation.

In man, the sinuses prior to puberty are in an undeveloped state— puberty in man is the phylogenetic "period of mating" in the lower animals. The unstable voice of youth, as well as the nasal character of voice in diseased adult sinuses, confirms these latter as subsidiary vocal organs.

The sinuses in birds and mammals develop **pari passu** with the generative organs. Prior to the completion of this strange duality, the lower animals remain unmated units—the higher animals are innocently unconscious of their sex. Great orators and vocalists are post-pubal products, hence the simultaneity in development of sinus and indifferent sexual gland, should be regarded as more than a mere coincidence. The intimate and unaccountable relation of sinuses to generative organs, suggests the solution of a problem looking to the reciprocal influence on these respective organs, of disease and surgical operations.

In their development the higher vertebrates pass through transitory stages, which in some of the lower animals become fixed structural characters. As a diagnostic expedient, early recognition of structural departure from the normal in man, is desirable. In the floor of the antrum of man, an elevation of variable height, producing antral pockets, represents in the horse a permanent partition, separating the anterior from the posterior antrum. Conchal sinuses, occasionally encountered in man, are permanent characters in the horse; while in man, an accessory ostium maxillare, opening into a conchal sinus is simply a reversion to a fixed structural character in the ox and horse. Those rare instances in man, of palatal and lachrymal sinuses and bulla ethmoidalis, communicating with the antrum of Highmore, are survivals of a constant condition in **bos domesticus;** likewise survive in the sinuses of man, those trabeculae, which in birds, give strength to the walls of pneumatic bones.

The sinuses, like the liver, pancreas, lungs and kidney, are products of evagination, and such products partake of the nature of the source from which they are derived. Just as kidney partakes of the nature of antecedent mesonephric duct, and lung, liver and pancreas resemble the alimentary canal, so do the accessory sinuses partake of the nature of the nose, from whose outer wall they were originally evaginated. The route pursued by an evaginating organ, subsequently forms the excretory duct of this organ. Polyevaginations may occur; as for instance, multiple bile duct, double processus vaginalis, bifid infundibula, or two or more openings for the antrum. Evaginated structures are inconstant in size, their ducts may be large or small, and they are ever liable to share an infection with the parent cavity.

Evagination of the membraneous maxillary sinus in the amphibia, carries with it neuro-epithelial cells; hence in **these** animals, this cavity has an olfactory function. In those reported cases in man in which sense of smell persists after the destruction of the nasal olfactory territory, a possible explanation of such persistence would be clearly along the line of reversion to the fixed structural characters of a type of animal, lower in the scale than man.

Each accessory nasal sinus, like the internal ear, consists of a membraneous, ectodermic lining, and an osseous mesodermic protective; hence the distinction between membraneous

and osseous sinuses should be as clear to the rhinalogist as the distinction between membraneous and osseous labyrinths is to the otologist. The perilymphatic space of the ear is embryologically analogous to the lymph space between the membraneous and osseous parts of the nasal sinuses.

Of pneumatic bones, Hunter says: "In birds of flight, (the volatores) the wing bone in the skeleton contains air in communication with air in the lungs, via of air-sacs in neck, thorax, pelvis, abdomen and intermuscular spaces. The air renders the body specifically lighter, aids mechanically in the action of the lungs, and purifies the blood as does air in the lungs."

According to Owen, the quantity of air admitted into the system, is proportional to the rapidity and continuance of flight; it is distributed to those members most employed in locomotion as to the wing-bones of the owl and to the femur of the ostrich.

Not all birds are volatares, hence some birds as those that move from place to place, principally by land, have less extensive respiratory expedients in the bones of the wings, than have birds of flight. Mere abbreviation of a respiratory system extending to wing bone of the skeleton in aerial animals, does not militate against the validity of the system in terrestrial animals, in which comparatively few bones are pneumatic. The subsidiary respiratory system under consideration simply contemplates **bones containing air in free communication with the lungs.** The number of bones may be great or small; the respiring animal may inhabit air, earth, or water. The function of the pneumatic bones is aeration, founded on the law of diffusion of liquids and gases. The final respiratory results may be maximal in one case and minimal in another. Pneumatic bones are always to be regarded as the local respiratory organs of the region in which they occur. In the elephant all the head-bones are pneumatic; in man, certain bones only, of the head, are air-containing, but in principle, the sinus-system in man is a revertion to a necessary subsidiary, respiratory system in birds.

Owen's statement regarding the distribution of air to organs in proportion to their functional activity, has a cogent application to the sinus-system in terrestrial vertebrates, including man of course. In these, the active parts near the sinuses are the brain and muscles of mastication. Blood from the respiratory field of the sinuses and from the mandibular region, reaches the pterygoid plexus, which latter, communicates with the sinuses of the dura mater via certain emissary veins. Blood reaching the pterygoid plexus from the accessory sinuses, is oxygenated, that reaching it from other sources is not. The sinus system in man is subsidiary to the pulmonary respiratory system, and forms the mammalian link in the most fully expanded respiratory panoply of air-breathing animals.

Clinical evidence having bearing on the subsidiary respiratory function of the sinuses is not wanting. Dr. C. M. Robertson of this city, in an article on "Headache from Non-Suppurative Inflammation of the Accessory Sinuses of the Nose," in commenting on an author's theory that headache in this class of cases is due to air pressure in the sinus, says: "The pain seems to me, however, to be produced by a diminution of air pressure in the sinus. This diminution in pressure is caused by obstruction to the entrance of air to the particular sinus, by closure of its natural orifice. For instance, the middle turbinate may be swollen from inflammation; the swollen body obstructs the sinus so that the cavity is shut off from the nasal chambers. The imprisoned air loses its oxygen from absorption by the blood vessels in the mucous membranes of the cavity."

That pain ensues on suppression of oxygen for a prolonged period, is a physiological truism. The local manifestation of this pain in the head in one patient, and in the pelvic distribution of the pudic nerve in another patient, finds its anatomical justification in superior qualities of the trigeminus and pudic nerves respectively, for reporting the pain. Fothergill says: "Pain is nature's cry for pure blood."

In general asphyxiation, bodily pains cease when the patient gains atmospheric air; in headache, due to an occluded ostium maxillare, the pain ceases according to clinical experience if the opening becomes patent. The two conditions of pain differ in degree only. Each is causatively related to the same common suppression of oxygen, and in each the turgescence and other local symptoms in the mucous membrane of sinus and bronchial tree would seem to be a sequence rather than a cause of the pain.

The simplest olfactory organ in all the true fishes, is a single, paired, ectodermic depression above the mouth. The most highly specialized organ of smell in fishes, consists of a spindle of neuro-epithelial cells with an independent disconnected sac. This sac foreshadows the sinus system in the higher vertebrates, and in the amphibia becomes an olfactory organ.

In the amphibians the olfactory organ divides into a nasal part and an accessory nasal chamber. In some cases the two parts are entirely separated and each has its own olfactory nerves.

"There can be no doubt," says Wiederscheim, "that the accessory nasal chamber in the amphibians is homologous with the maxillary sinus of all vertebrates. In no other vertebrates, however, does it retain the character of a kind of separate nasal chamber, but on the contrary, the higher we pass in the vertebrate series, the more does the maxillary cavity become separated physiologically from the olfactory organ; it loses its olfactory epithelium and finally degenerates into a simple air-sinus."

The pneumatic bones of man are confined to the head. They contain after childhood, air cavities communicating with the nasal portion of the respiratory system which are variously designated cells, sinuses and antra. The naming is founded rather on differences in size than on inherent structural peculiarities, for they are similar in location, development, nutrition, function and liability to local and

constitutional disorders. The sinuses are accessible from without, and on this accessibility doubtless depends the frequency of their invasion by disease as well as the refined technique of their medical and surgical treatment.

The accessory sinuses are evaginations of the nose, hence their epithelia are of ectodermic origin. They partake of the nature of the nose for evident embryologic reasons, hence the great similarity between morbid processes in them and in the parent cavity—the nose.

In man the sinuses occur in the frontal, sphenoid, ethmoid and maxilla. They admit of general, not of specific limitations. They are variable in size in different races—in people of the same race, and even in the same individual, the sinuses of the sides may differ.

In conformity with the general biologic rule, the openings of the sinuses may occur doubly, in this regard reminding one of a double ureter for a single kidney, or of a supernumerary processus vaginalis. The ostium maxillare, like the openings of the remaining sinuses, vary much in size within physiological bounds, for the evagination routes of evaginated structures are amenable to no known law regarding size.

Sex exerts no important influence over the sinuses, in regard to size, level or excretory openings. Clinical experience and post mortems do not justify the statement that the floor of the antrum in women is above, in men, below the floor of the nose.

The sinuses in man are tardy in appearance, and with no demonstrable reason, develop simultaneously with the generative organs. As the genital conduits in male and female announce their completed canalization by pollution and ovulation respectively, so the sinuses announce their completion by adult quality of voice.

The sinuses are provided with a vascular mucous membrane continuous with that of the nose, and which, compared with that of the parent cavity, is weak, pale, flabby and detachable—negative qualities, probably superinduced by loss of olfactory function and intramural environment. The sinuses are supplied by the ethmoidal, sphenopalatine, descending palatine, vidian and pterygopalatine arteries. These arteries and their corresponding veins form a capillary plexus which communicates by several routes with the venous blood in the sinuses of the duramater of the brain.

At birth, the frontal sinus is absent; the maxillary sinus is a shallow groove on the outer wall of the nasal fossa; the ethmoid cells are small depressions and the body of the sphenoid has no trace of air-cells.

The frontal sinus is innervated by the supratrochlear branch of the frontal nerve, the maxillary by the posterior superior dental; the ethmoidal and sphenoidal by Meckel's ganglion; the bony walls of the sinuses, like bone in general, by gray rami communicantes.

Disease in the sinuses, according to the law of radiation of pain from trigeminus to cervical nerves, may produce reflex disturbances in diaphragm, head, neck and upper extremity. Conversely, lesions in the distribution of the cervical nerves may produce reflex pain in the distribution of the trigeminus.

Anatomically, looking to the greatest conservatism of the teeth, operations on the antrum via the anterior wall, are unjustifiable, on account of the necessary destruction of dental vessels and nerves. A devitalized tooth-pulp is conducive to early decay of the tooth. The operator should never sacrifice a sound tooth in operations on the antrum. The only absolutely safe route, under every circumstance, is via the nose.

The mucous membrane of the sinuses is vascular and its capillaries are in communication with the venous blood of the brain and pterygoid plexus, thus forming a means of limited local oxygenation of blood.

The sinuses in man are more frequently diseased than in the lower animals. It would be interesting to know the ratio of healthy dentures to diseased antra, if, indeed, diseased antra, and sound teeth ever inhabit the same host. Equally instructive were statistics giving the relative frequency of antral disease to inflammatory affections of eye, ear and nose. Following operations, the mucous membrane of the sinuses regenerates slowly in comparison to the rapid regeneration of the mucous membrane of the nose, following like trauma. The proximity of the internal carotids to the sphenoidal sinus in some cases, renders operations on this sinus, anatomically unjustifiable, since no operator can foresee the danger, in any case, of injury to the arteries. Operation on the sphenoidal sinus consequently violates the law relating to ordinary care and ordinary skill.

In reply to an inquiry regarding the sinus in the domestic animals, I received the following information from John R. McNeal, Professor of Anatomy and Surgery in the Department of Veterinary Medicine, University of Iowa:

"The function of the sinuses in the domestic animals has not been definitely determined. Evidence that they have anything to do with respiration or olfaction, is wanting. They do, however, increase the volume of the head, thus supplying a large surface for the attachment of facial muscles.

"In early life the sinuses are but incompletely developed, and those about the dental arches contain the roots of the molar teeth. They increase in size (a) by absorption of bone; (b) by the downward growth of the teeth.

"The four superior sinuses communicate, hence infection of one means infection of all. The inferior maxillary sinus, separated from the superior maxillary sinus by a thin bony septum, may or may not be involved in infection of this latter. The superior and inferior maxillary sinuses communicate with the nasal fossa through an elongated slit at the opening of the superior portion of the middle meatus. The cavity of the anterior turbinated bone is a continuation of the frontal sinus; the inferior maxillary sinus communicates with the cavity of the posterior turbinated bone.

"Infection of the sinuses may be due to (a) glanders nodules on the mucous membrane; (b)

degenerated tumors of the sinuses; (c) purulent inflammation due to the streptococcus of Schutz, and known as the streptococcus of Strangles; (d) alveolar periostitis, due to unequal wear of crown, or necrotic or splintered tooth. (The 4th molar is most commonly involved, and, since its roots may extend into the partition separating the two maxillary sinuses, these may both be involved). (e) Fracture of the maxillary bones.

"The condition causing empyema of the sinuses in animals in captivity, differ from those causing like diseases in animals in the native state, only in the nature of the food and its influence upon the teeth. In most cases of empyema, the mucous membrane is thickened and indurated, and granulations may be confidently expected to fill the remaining space in the sinus. The ethmoidal cells are seldom involved primarily, but may be involved secondarily by extensions from the frontal sinus."

Anatomical Questions for Rhinologists.

1. In what percentage of diseased sinuses have you noted reflex motor or sensory phenomena in the peripheral distribution of the 5th cranial and cervical nerves?

2. As a rule, in diseased sinuses, does the patient have pain in the teeth, either sound or carious?

3. Have you encountered cases in which reflex earache resulted from local disease of the sinuses?

4. Have you met cases of spasticity of muscles of mastication, due to primary or secondary inflammation of the sinuses?

5. Does pregnancy produce the same reflex phenomena in the sinuses, as frequently occurs in the gums and teeth?

6. In operations on the antrum of Highmore via the anterior wall, what influence on the incisor teeth follows destruction of the anterior superior dental vessels and nerves?

7. In operations on the sphenoidal sinusees, has the internal carotid artery every been injured? In some cases the artery is separated from the sinus cavity by the mucous membrane only.

8. How long after obliteration of the antrum or frontal sinus by inflammation, before marked changes in vocalization begin to occur?

9. Have you had experience in cases in which the sense of smell persisted, after destruction by trauma or disease, of the nasal olfactory region?

10. In what percentage of cases are diseased antra due to diseased teeth? May antral disease extend to, and infect the teeth and gums?

11. Does removal of the Gasserian ganglion have any marked trophic influence on the sinuses?

12. Is there any constant relation between neuralgia of the 5th nerve and disease of the sinuses?

13. What changes occur in the sinuses, as a result of (a) loss of all the upper teeth: (b) true ankylosis of the temporo-mandibular articulation?

Conclusions.

The accessory sinuses of the nose in man are phylogenetically very ancient structures, and figure physiologically as feeble, subsidiary, respiratory organs.

The maxillary sinus in the higher vertebrates, has its prototype in the amphibian accessory nasal chamber, in which it was an olfactory organ; hence, phylogenetically the antrum in man is an obsolete organ of smell.

For as yet unaccountable reasons, the sinuses develop **pari passu** with the generative organs, and there is evidence of an intimate physiologic relation between these remote anatomic organs.

The variations, even in healthy sinuses, are so great, that it were hazardous to attempt an analytical classification looking to definite size, shape, or openings. For embryologic reasons each sinus is a law unto itself.

The sinuses are supplied by the trifacial nerve; hence, reflex phenomena between them and the peripheral cervical nerves is possible.

As a diagnostic expedient, the specialist should always bear in mind the possibility, in the sinuses of man, of revertion to structural fixed types in the lower vertebrates.

Operations on the sphenoidal sinus are anatomically unjustifiable ones. Sound teeth should never be sacrificed, and the nasal route for gaining entrance to the antrum is never dangerous.

979 West Jackson Boulevard.

Dr. Talbot's Discussion.

Eugene S. Talbot, with lantern slides, showed the evolution, embryology, period of stress and the method by which arrests of the face, nose, jaws and teeth are produced. These arrests and excessive developments are due to an unbalanced nervous system. He also showed the two typical forms of faces in neurotics and degenerates in which these deformities are always present.

While making examinations of skulls in this country and Europe some two decades ago, especial attention was given to abscessed and diseased antra due to dead pulps in the teeth.

Of the 11,000 skulls examined for deformities, only 3,000 were in a broken condition, so that the antra could be examined, making 6,000 antra in all. Of this number 1,274, or about 21 per cent, had abscessed molar teeth. Of this number 76 or about 6 per cent, extended into and apparently discharged into the antrum.

M. H. Fletcher examined 500 skulls making 1,000 antra. He found 252 upper molars abscessed making 25 per cent of antra which have abscesses in this locality. Out of 252 possible cases perforation into the antrum was found only 12 times. Thus showing over 4½ per cent of abscessed teeth in this locality which are connected with the antrum.

Many of the older practitioners of dentistry have never observed a single instance where an alveolar abscess has perforated the antrum. This statement, however, must be taken with some allowance, since the older practitioners

were not good diagnosticians of pathologic conditions. M. H. Fletcher, found in 224 cases of pulpless molar teeth only one case of pus in the antrum.

In the treatment of 367 cases of pulpless teeth in connection with the superior molars in the past twenty-two years, I found only three cases of diseased antrum, making less than three per cent. Taking therefore, the large number of teeth treated by dentists because of dead pulps and alveolar abscess, the number of diseased antra due to alveolar abscess is very small.

Thomas L. Gilmer: My experience may have been a peculiar one, in that it has been somewhat different from that of Dr. Talbot, and it may be accounted for on account of his having examined pre-historic skulls which were not those of degenerates. The skulls that I have examined however, were not those of degenerates, so far as I could judge. Last night I examined sixteen unselected skulls, which were placed in my hands by Dr. Eckley, and in that number I found three in which the buccal roots had penetrated the antrum of Highmore. There were a few of these in which the bony walls were left intact, so that I could not make an examination of the antrum, therefore more of them may have had penetrations. In one there was evidence of an abscess from a tooth which had destroyed the bone and opened into the maxillary sinus. In my clinic I find cases continually of abscess of the roots which have penetrated the antrum of Highmore which in some instances have been the primary cause of empyema. I should say, that I see at least two or three or more such cases in a month.

With regard to the teeth having been previously lost in cases of empyema, as said by the last speaker, my experience teaches me that this is not generally the case, but rather in the majority of cases that they are in place and in many instances not badly decayed.

Dr. Eckley has asked the question whether or not the pulps of teeth may be destroyed as the result of empyema or a diseased condition of the lining of the maxillary sinus. We find occasionally what are considered sound teeth, that is teeth not decayed, in which the pulps are dead, with no external attributable cause, and in such instances it is possible that inflammation of the lining of the antrum has extended to the pulps of the teeth, with destruction of the nerve and blood vessels of that organ. If the roots of the teeth penetrate the floor of a sinus involved in an empyema there is every probability that their pulps will be destroyed, and even if the primary cause of the empyema be removed, unless the roots be also removed, it will be continued by the toxic elements from the roots.

In regard to making the external opening, I do not think Dr. Ballenger intended that it should be made so near the median line as his clay model indicates, as he knows the bone is much thicker here; it should be made a little farther back, that is between the second bicuspid and first molar, or just above these teeth, as the bone at this point, especially in older people, is very thin and an opening is easily made here. The cheek falls over the opening and closes it, so as to prevent particles of food from passing into the sinus. I do not see why an opening made at that point would cause a secondary infection of the antrum any more readily than it would if the opening were made from the nose. It is true we have many micro-organisms in the mouth, but I doubt if there are more of the pyogenic forms in the mouth than in the nose and certainly not as many of the influenza bacillus which is so often found in the discharges from the antrum. If the opening in the sinus is made for the purpose of curetting certainly the roots through the buscal will affords a better opportunity for this, than does the nasal.

Albert B. Hale: In performing the Killian operation, if one has once injured the superior oblique, he might as well give up all hope of restoring function. That is a point to be remembered by everyone who is bold enough to undertake this operation. If the seventh nerve is injured by the general surgeon in attacking the mastoid, the atologist has a right to blame him for invading a field not perfectly understood, and the atologist should not be expected to repair the errors of his inexpert confere; in the same way if the superior oblique is injured by the rhinologist in performing this operation, he must assume the responsibility and acknowledge that the eye surgeon cannot so easily correct any impairment which may follow.

Dr. Arthur D. Black: There is one point I wish to refer to, namely; the statement that pulps of teeth may die in cases where operation has been done through the anterior wall of the antrum. I have operated a number of such cases and have seen scores of cases operated in that way, and yet have never seen a case in which there was death of the pulp of a tooth resulting from the operation, any more than we would get death of the pulps of teeth in removing, for instance, the inferior dental nerve from the canal. The pulps of teeth do not die following such an operation, because collateral circulation is established by which the pulps are kept alive.

Dr. Eckley (closing the discussion): I wish to thank the gentlemen both individually and collectively for the interest they have taken in the discussion of this subject. I was particularly interested in what Dr. Talbot had to say regarding the degenerate face and its influence upon the antrum of Highmore. Dr. Ballenger's clay model for demonstrating operations on the antrum and frontal sinus cannot be too highly praised and its teaching value in impressing the correct topography of these parts is unexcelled.

I wish to thank Dr. Arthur Black for referring to the fact that the pulp of the tooth does not die when the dental nerves are interfered with.

Radical Mastoid Operation—Skin Grafting in the Middle Ear and Mastoid Antrum Cells.

William L. Ballenger: About nine years ago this patient, Miss M. G., age 16 years, was

vaccinated. This was followed very soon thereafter by a discharge from the left ear. As far as can be learned, this was the cause of the trouble. Four years ago she came under my observation, was treated by conservative methods for a long time, probably a year and a half, without relief, except temporarily. Three years ago I did a radical mastoid operation, finding cholesteatomatous masses in the middle ear and mastoid cavities, with suppuration, caries, and perforation in the middle fossa of the skull. At the time there was marked meningeal irritation, the patient threatening violence to her mother. The operation afforded relief, but subsequently there was necrosis in the mastoid portion of the wound, which necessitated a secondary operation. A few days following the second operation I did a Thiersch graft in the mastoid portion, and a week or two later I did a Thiersch graft in the middle ear cavity, so that at present the middle ear, as well as the mastoid cavity, is completely lined with healthy skin.

The case is interesting on account of the Fallopian canal being exposed, showing plainly the location of the facial nerve. The Eustachian tube is likewise visible through the mastoid wound. On Monday I passed a bougie through the Eustachian catheter via the nose, and out through the middle ear. There is only left a little suppuration within the Eustachian tube; I expect to close the tube later, and having done it, I shall close the mastoid wound by a plastic operation, and with paraffin injections hope to avoid much deformity. The patient is entirely well, and has been since last October.

Joint meeting of the Chicago Medical and Chicago Orthopedic Societies, March 30, 1904, with the President of the Chicago Orthopedic Society, Dr. Arthur B. Hosmer, in the chair.

Multiple Lipomata.

Dr. Weller VanHook exhibited a man about sixty years of age with multiple symmetrical lipomata. The masses at the back of the neck being especially prominent. The patient first noticed the latter nine years ago. At first the size of peas, they annoyed him an account of the pressure upon his collar button, but within a year or so they had attained their present size, necessitating the wearing of a No. 21 collar.

Dr. VanHook stated that symmetrical lipomata of the neck region were not very rare but that this was a pronounced case.

Gunshot Wound of the Elbow Joint.

The next case presented by Dr. VanHook was one of considerable interest, the patient having sustained a gunshot wound in the month of November, the bullet lodging in the elbow under the olecranon process. On this account the patient was unable to fully extend the elbow. The X-Ray plates were probably the most interesting feature of the exhibit. He made an incision about three inches long and extracted the bullet without much difficulty. There is still some incompleteness of extension but it is gradually improving. The patient is able to swing a sledge-hammer.

Double Congenital Dislocation of the Heads of the Radii.

Dr. VanHook showed a little girl with double congenital dislocation of the heads of the radii, saying that such cases were quite uncommon but not rare. Hoffa has had one of his assistants collect 31 cases from the literature. Of 12 cases that came under the observation of Hoffa, eight were backward dislocations and 4 forward. In the speaker's case, the dislocations were both forward. The arms were in complete extension; no flexion could be effected. But after resection of the heads of the radii, it was possible to get some flexion. There was elongation of the radii, which was common in such cases, preventing flexion at the elbows. The joints were imperfectly developed. The synovial cavities were not sufficiently extensive, and it has been the effort of months of treatment which he has given the case to extend the range of motion in the joints by occasional manipulation with and without nitrous oxide gas anaesthesia. He believed the joint capsules were doing better work now than they did. There was certainly more motion than there was soon after the operations were undertaken. The little patient was now able to put her hand up to her face which she could not do before treatment was instituted.

The first operation for the relief of this deformity was performed by Langenbeck in the earlier part of the last century, when a resection of the entire elbow joint was done. He said that the head of the radius had been resected by Hoffa, Bessel-Hagen and others with reported good results. Resection of the head of the radius was indicated in those cases where there was well-marked elongation of the radius, the radius being thus shortened sufficiently to come into fairly good articulation with the other structures.

The etiology of this deformity had elicited considerable discussion. Some had regarded it as due to an intrauterine improper position, while others had considered it to be due to unequal and improper growth of the bones composing the elbow joint, the elongation of the radius being supposed to be the chief etiological factor. The muscles in his case had never sufficiently developed about the elbow joint, either above or below; but considerable development had taken place in his case since the treatment was begun last June.

Dr. John Ridlon asked Dr. VanHook to offer some explanation of why the arms did not fully straighten. He said that his explanation of not being able to flex them was perfectly clear, but that he did not mention the reason for their inability to fully straighten.

Dr. VanHook replied that he had kept the little girl's elbows on one occasion for quite a little while in as great flexion as was possible in order that the child might reach her face and head. Some contracture had resulted. However, he was in hopes that he would be able to regain the lost extension.

In reply to a question asked by the President, Dr. VanHook said that the ligamentous structures were imperfectly developed, being

very thin and very much spread out. It was quite easy to cut down upon the head of the bone and excise the semi-cartilaginous mass.

Compound Comminuted Fracture Associated With Dislocation of the Ankle Joint.

Dr. L. L. McArthur showed a patient upon whom he had operated for this fracture and dislocation. He mentioned how the fracture was produced. Black mud was ground into the deeper portions of the joint. The vessels of the foot were intact. After some hesitation, but re-enforced by the statement of the patient that she would rather die than have an amputation performed, he decided to try and preserve the foot. Under anesthesia he opened the joint as if to make a resection of it, exposing the entire articular surface by simply turning the foot outwards on the leg. The fibula was comminuted; the tibia was fractured, and the internal malleolus loosened from the tibia. The broken end of the tibia had dirt ground into the pores of the bone. The end of the tibia was chiseled off and freshened; the black dirt washed out of the joint as thoroughly as possible, and 95 per cent. carbolic acid swabbed over the entire joint surface for thirty seconds, followed by the use of alcohol until all the whitening effect of the carbolic acid had disappeared. The tibial fragments were wired together. The lower fragment, fortunately being adherent to the internal lateral ligament, by simply wiring it to the shaft of the tibia allowed sufficient fixation of the foot to permit doing without a cast. On the three following days the patient was given three successive doses of anti-tetanic serum to guard against the possibility of tetanus developing. It was the author's practice to do this in such cases. At the end of four weeks the patient left the hospital with an excellent result having been obtained. He emphasized the desirability of trying, with the consent and understanding of the patient, to save all limbs in which circulation is good, with the opportunity for a prompt amputation, should it become necessary, afterwards. He said it was absurd to hope much from the anti-tetanic serum after the toxins had become colligated with the nervous tissue of the spinal cord.

Compound Comminuted Intercondylar Fracture.

Dr. McArthur called attention to a case of compound comminuted fracture involving the knee joint, the character of the fracture being oblique intercondylar, with one fragment sticking through the skin. The patient, a sign painter, fell from a scaffolding, striking with great violence, fracturing his knee, and driving a fragment through the integument. The wound was enlarged, the fragments wired together, and a useful joint obtained. A skiagraph showed the fragments nicely united and the wire in situ.

Dr. A. B. Hosmer asked whether Dr. McArthur had seen any toxic effects from the use of 95 per cent carbolic acid in joint injuries, after applying it for thirty or forty seconds, where there was extensive injury of bone.

Dr. McArthur replied that he had not. He thought, however, that this was a particularly appropriate case in which to use it.

Dr. Frederick Cleveland Test inquired if he had seen any closing in of adhesions within the joint itself after the use of carbolic acid.

Dr. McArthur answered that he had not.

The remainder of the program was devoted to a symposium on **Tuberculous Spondylitis.**

Etiology.

Dr. Edwin W. Ryerson discussed this phase of the subject, saying that tubercular spondylitis was applied to a destructive tubercular process attacking the vertebrae. It occurred in the anterior portion, or body, of the vertebra, the part which did the supporting and weight-bearing of the upper half of the individual. It practically never affected the rest of the vertebrae, the pedicles, and laminae, and processes, but the intervertebral discs were often destroyed by the direct extension of the disease. The disease was caused by the local deposit of tubercle bacilli which had been disseminated into the blood current, either from an older focus somewhere else in the patient's body, or from some direct infection of the circulation through the skin or mucous membranes. This latter method was rare, but was supposed by Koenig to have occurred in several cases of joint tuberculosis, where at autopsy no antecedent focus could be found. The usual infection route, however, was undoubtedly through the lymphatic glands, bronchial, mesenteric or cervical, from which the bacilli found their way into the circulation individually or in small embolic masses, and traveled through the blood vessels until arrested by some obscure, determining cause, perhaps a minute hemorrhage due to slight traumatism, or possibly a little defect in the loosely constructed vessel walls, which allowed a mural implantation.

The disease was most prevalent among the ill-nourished children of the poor, living in localities where they were exposed to tubercular infection, in overcrowded and unsanitary dwellings. A large proportion of such children were shown at autopsy to have glandular tuberculosis, even though no clinical manifestations may have existed. Moreover, a clear hereditary predisposition had been demonstrated in from 25 to 70 per cent of the cases of Pott's disease, the statistics of the different authors varying within those limits.

Both sexes were about equally represented, boys being slightly more numerous than girls. Age was a powerful factor, for eighty-five per cent of all cases began in the first decade of life, and fifty per cent between the third and fifth years. No age was exempt, since cases were on record as young as two months, and as old as seventy-seven years. The disease was very common, and formed nearly half of all the various tubercular joint lesions. The portion of the spine most frequently affected was stated by Taylor to be the cervical region, but most other observers considered the junction of the dorsal and lumbar regions to be the most vulnerable. When in the cervical or lumbar vertebrae, the deformity was apt to be smaller and more successfully treated than when in the mid-dorsal regions.

Diagnosis and Prognosis.

Dr. John L. Porter said that in no form of tuberculosis did an early diagnosis mean more to the patient than in tuberculosis of the spine. Until the diagnosis was made, efficient, intelligent treatment could not be instituted. With an early diagnosis, not only was the treatment made more effective, and the prognosis improved, but the patient might often be saved a distressing deformity which added to an already crippled existence a burden of mental suffering and pain. He believed that a diagnosis of spondylitis could and should be made in every case before any deformity had appeared; regardless of the age of the patient, in almost every case sufficient additional evidence might be elicited to enable one to decide with reasonable certainty whether it was tuberculosis or not. Stiffness and rigidity of the spinal muscles, limiting the normal freedom of motion, and producing involuntary spasm of the muscles when motion was attempted, were the earliest, the most constant, and the most reliable signs of joint trouble anywhere.

He considered the signs and symptoms of spondylitis in detail, with relation to the different divisions of the spine. He believed more failures to diagnose spondylitis were due to lack of careful examination than to lack of knowledge; but he did know that diagnoses of colic, rheumatism, sciatica, or injury covered a multitude of errors. When practitioners remembered that spondylitis might cause any kind of pain, from headache, earache, to sciatica, and when they cultivated the habit of examining the spine for rigidity as carefully as they examined suspicious lungs for tubercle bacilli, the early diagnosis of tuberculous spondylitis would be more frequently made.

In the prognosis of tuberculous spondylitis, one had to consider: (1) The factors concerned in the prognosis were the time at which the diagnosis is made and the treatment begun. (2) Individual resistance to the disease. (3) The patient's age. (4) The patient's environment. These, with the location of the disease in the spine, were the chief points in determining the prognosis. Each point was elaborated by the speaker.

Straightening of the Curvatures of Tubercular Spondylitis.

Dr. John Ridlon, after mentioning the methods of straightening of curvatures in cases of tuberculous spondylitis, related his personal opinions and conclusions, to which he had arrived from his experience, which were:

So long as the carious disease was active, and before structural shortening in the muscles and distortion in the ribs had taken place, and before any solidification had occurred at the point of disease, straightening of the spinal deformity was possible by gentle means, i. e., without anesthetizing the patient. When the deformity was still increasing, even if some solidification had taken place, straightening could be made by force in certain regions, namely, where distorted ribs and structurally shortened muscles did not hinder, and in all regions some gain could be had by the use of reasonable force. But when solidification had become complete, or so complete that there had been no increase of deformity for some months, the use of unreasonable force to make the spine straight was to be deprecated. In the cervical region he had always feared to use force to effect straightening. On the other hand, he had never failed to straighten cervical deformity by gentle means, namely, traction during recumbency, in all cases presenting evidence of active disease. In the upper dorsal region it was very difficult to apply force advantageously, and equally difficult to maintain any correction that might be made; and he was of the opinion that gentle traction and prolonged recumbency with leverage would accomplish as much as force. Only occasionally did one effect a straightening in this region; generally one must be satisfied to prevent a development or an increase of the deformity. In the lower dorsal and dorso-lumbar regions, the most frequent site of spinal caries, forcible straightening was most readily effected, and gave the best results. In the lower lumbar and lumbo-sacral regions, it was difficult to maintain any correction accomplished by forcible methods, and it was perhaps as well to treat these cases by traction and leverage. In selecting cases for forcible straightening, one should reject cervical cases as dangerous, upper dorsal cases as too difficult to straighten, and lower lumbar cases as too difficult to hold. Cases where the deformity had not increased for six months or more should be rejected as cases in which the disease had healed; and cases of short duration and no great deformity should be rejected as exposing the patient to unnecessary risk, for these cases could be straightened equally well by gentle methods. Patients that had been subjected to forcible straightening must be kept in absolute recumbency for from eight months to one year at least, and the region straightened must be as carefully immobilized as if fractured. Relapse of deformity to some extent usually occurred, but it was due to ineffective immobilization, careless nursing, or too short a period of recumbency. By gentle methods real straightening was not to be expected in patients who were allowed to sit up and walk around, though sometimes a false straightening could be accomplished; that is to say, the patient as a whole could be made to look straighter, though the actual kyphosis remained the same.

The antero-posterior leverage spine brace was effective as a straightening device only in the hands of one familiar with its mechanical possibilities; it was not to be recommended to the general practitioner of medicine or surgery. Combined traction or leverage, though the most effective gentle means, was useless unless the patient was tractable and the nurse efficient. It should never be tried on an unruly patient, or where the nursing was inefficient.

For most patients, cared for by the average nurse, and treated by any doctor other than an expert, a plaster jacket put on with the patient on Goldthwaite's frame, or some modification thereof, with the jacket sufficiently long both at the top and bottom would be found the most

trustworthy device for immobilization, and when combined with recumbency for a long period, the most satisfactory method of treatment.

The Present Status of the Mechanical Treatment of Spondylitis.

Dr. Wallace Blanchard said that in considering the mechanical treatment of spondylitis it must be thoroughly understood that to get good ultimate results treatment should be begun at the earliest possible moment, and must be persisted in unremittingly until a cure is effected.

It is surprising to meet with a diversity of opinions regarding the utility of the various forms of apparatus, for several surgeons may be equally successful in their ultimate results, each utilizing the appliances with which he is the most skilled. The form of apparatus or method of treatment is of minor importance as compared to a correct understanding of the principles involved, and a firm determination when a case was once undertaken to unremittingly persevere as long as treatment might be necessary.

Treatment by recumbency was frequently advisable in the early acute stages, and was occasionally necessary in cases that had become considerably advanced without any adequate treatment and with considerable deformity, with general physical weakness, and more or less advanced Pott's paraplegia. When recumbent treatment was employed it should be faithfully carried out with the view of having the patient on his feet with his spine safely protected in a jacket or brace at an early period. Frequently when the deformity was advancing, the most approved treatment was a combination of plaster jacket or brace with recumbency on any convenient lounging place, and preferably in the open air. The plaster jacket was very largely used and its efficiency had been greatly increased, if not doubled, by the use of the Goldthwaite stretcher frame. The author demonstrated how to apply the plaster jacket by the aid of this frame, and stated that prolonged experience had thoroughly demonstrated that when made and applied with proper skill and care, the plaster jacket and many of the forms of braces were very efficient for the treatment and cure of spondylitis, and that in a great majority of the carefully treated cases the deforming hump could be minimized and largely neutralized, and in a few favorable cases nearly, or quite, obliterated.

A set of principles based upon the most approved mechanical means of treatment might be formulated, though the extent to which they could be carried out varied in each individual case. (1) To remove the superincumbent weight of the body. (2) To prevent flexion and rotation of the spine. (3) To put the greatest possible amount of pressure upon, or in the immediate vicinity of, the deformity compatible with the integrity of the skin. (4) To very thoroughly hyperextend the spine.

It was believed that the application of these principles placed the spine in the best possible circumstances for healing, with the least possible amount of deformity.

The author exhibited a plaster jacket with chin rest; a Taylor back brace with head supports; a brace for cervical spondylitis partially applied, with the chin nearly touching the chest, which was the typical position in advanced cervical spondylitis, and a brace for the treatment of cervical spondylitis.

Gravitation Abscess.

Dr. Alex C. Wiener discussed this phase of the subject, and presented a patient upon whom he had operated for gravitation abscess. Gravitation abscess was both frequent and difficult to treat. There was a temptation to open these abscesses at the most prominent part and empty the pus, but this did not reach the seat of the difficulty. It only encumbered the patient with permanently oozing fistulae, which were usually accompanied by mixed infection and amyloid degeneration, followed by the death of the patient. Such abscesses were rarely accompanied by fever, 101° F. being the highest recorded. The ordinary symptoms of sepsis were not present, and under favorable circumstances absorption might take place. He had observed in the right iliac fossa in a man, 45 years of age, a tuberculous abscess the size of a child's head, which disappeared without leaving a trace. In this case there was a destruction of the first lumbar vertebra, and the only treatment employed was a permanent extension apparatus.

Recently he had used, in a large psoas abscess, reaching down to the middle of the left femur, which originated in a tuberculous spondylitis of the first and second lumbar vertebrae, a large trocar to empty the pus. The man, 34 years of age, was attacked seventeen years ago with tuberculous spondylitis, which left quite a kyphosis of the lumbar spine. For seventeen years he did not experience any inconvenience, when, without apparent cause, the tuberculous process revived, resulting in a large psoas abscess which bulged forward at Scarpa's triangle. Just behind and below the left great trochanter was found a small swelling the size of a silver dollar. This spot was chosen for three preliminary injections of carbolic acid, six drops each time, five and seven days apart. Carbolic acid seemed to have powerful chemotactic qualities, since it allured, so to speak, the pus to the outer side of the femur. One pint of thick pus intermixed with chunks of fibrinous coagula and fine osseous debris was emptied the first time. Then fifteen drops of ninety-five per cent solution of carbolic acid were slowly injected into the abscess cavity. The operation was repeated six times at intervals of one to three weeks. The last injection was made three months after the first one, when the fluid had changed into a clear yellow serum. At no time was there any harm experienced, either local or systemic, and the injections seemed to cause no pain or inconvenience.

Surgical Treatment of Tubercular Spondylitis.

Dr. A. E. Halstead said that the surgical treatment of Pott's disease comprehended (1) the removal of the tubercular focus in the bone; (2) the treatment by incision or by puncture of the abscesses that are secondary to the bone disease, and (3) the operative treatment by laminectomy of the most serious of all of the complications of this disease, namely, the para-

plegia resulting from pressure upon the spinal cord. The treatment of these abscesses by incision did not yield good results because of the inaccessibility of the underlying bone disease. In the cases where there was no hope of following the abscess to its source in the bone, incision should, if possible, be avoided. In this class of cases aspiration of the contents of the abscess cavity, followed by washing out of the cavity and the subsequent injection of iodoform, should be practiced. In cases of small abscess, one should incise the abscess and eradicate the diseased tissue, as this offered the best hope for a speedy and permanent cure. When the abscess was large, or when it appeared some distance from the diseased vertebrae, as in psoas abscess, puncture and injection of iodoform emulsion should be practiced to prevent rupture and consequent mixed infection.

He said the post-mortem findings in cases dying from paralysis occurring in Pott's disease presented the strongest argument in favor of laminectomy. It had been fully demonstrated that the paralysis was practically never due to an inflammation of the cord, and that the so-called myelitis was not a myelitis, but a pressure atrophy of slow development. Schmaus and others had shown by a careful study of the post-mortem records that it was only in about two per cent of the cases that the pressure exerted upon the cord was the result of angularity of the vertebral column. In thirty-two cases out of thirty-three reviewed by Schmaus, the pressure was due to the tuberculous process breaking into the spinal cord, the immediate cause being either a tuberculous peripachymeningitis or a tuberculous abscess within the canal.

The author's experience in the operative treatment of paraplegia due to spinal caries had been limited to two cases, which were detailed, one of which recovered, and the other died.

He said laminectomy was contraindicated in cases in which there was tuberculosis of any other organ. In one of his cases the lung and pleural tuberculosis probably existed before the operation, although its presence was not recognized. The duration of the paralysis offered no contraindication to the operation, as it was not so much the length of time that the cord had been subjected to pressure, as the way in which the pressure was exerted that affected the integrity of the cord and determined the possibility of recovery.

Discussion.

Dr. M. L. Harris said that the importance of an early diagnosis had been very well emphasized, and the statement also made, which was eminently correct, that mistakes in diagnosis were usually made because of omission on part of the surgeon or the physician to recognize certain points which were well known. These were errors of omission.

The rigidity which had been emphasized as the early symptom was present in such a number of conditions about the cervical region that more attention should be devoted to this region in the differential diagnosis than to rigidity in other regions of the body. That is to say, there were so many conditions which might occur about the head and the neck which would produce rigidity of the cervical spine that one must make a differentiation. One of the important points to be observed in rigidity of the cervical spine as indicating the involvement of the spinal column itself was the relief which came from extension. For instance, take a child with a rigid neck, by gently extending the head and relieving the pressure, consequently pain, considerable motion might be given to the head without resistance on part of the patient. If one found relief of rigidity by this extension, it was certain evidence that the trouble was in the spinal column itself. If the rigidity was due to any extra-spinal trouble, it was almost always increased by extension and by motion.

With regard to the treatment of abscesses, as long as a tubercular abscess of spinal origin was not increasing in size, he thought it should be left alone, as many of these abscesses disappeared by proper mechanical treatment. Only when they increased in size, in spite of conservative treatment, and when they were approaching the surface and seemed as though they would rupture spontaneously, something should be done by the surgeon. One should always attempt to cure these abscesses by the so-called subcutaneous method first, that is, aspirating them, and after washing them out, injecting them rather than opening them, in order to avoid secondary and mixed infections. In emptying these abscesses by means of a trocar, for instance, great care should be exercised not to produce unnecessary pressure on the abscess, as by so doing one was liable, particularly if the trocar became occluded by the caseous masses, to infect the tract around the trocar, and one would have spontaneous opening of the tuberculous tract soon after in spite of anything he could do. The trocar should be introduced from some distance, to prevent if possible, the escape of any of the fluid about the trocar, or following the trocar after it had been in the joint. He had seen infection follow the track of the trocar in a number of cases. He had used carbolic acid for a long time in injecting these cavities; it was preferable, as a rule, to iodoform emulsion.

Dr. Frederick Mueller said that early diagnosis in every case of Pott's disease was of the greatest importance, and although we did not have any means of stopping the tubercular process proper, we might succeed sometimes in restricting the deformity which would always follow the establishment of a tuberculous process in the vertebral column.

The treatment which had been advocated was mostly conservative, which supported or extended the vertebral column, thus confining all surgical intervention to the treatment of abscesses and paralysis.

Different kinds of appliances and apparatus had been mentioned. They were all useful in treating these cases, and no doubt good results could be obtained by employing them, but he did not think it was possible to give preference to a special brace in all cases. He said the Lorenz apparatus was very effective in these cases. It had more advantages than the Bradford frame, because in the Bradford frame the

patients were able to make lateral motion, whereas in the Lorenz plaster bag or apparatus the patient was kept always in the same position. This apparatus consisted of a posterior case of plaster-of-Paris which included the head, neck, back, and pelvis, and was well padded. Dr. Mueller then discussed the pathology of the paralysis in cases of spondylitis, and said that Schmaus of Munich, about ten years ago found that paralysis in cases of Pott's disease was due to a kind of inflammatory edema, which was caused by the establishment of the tubercular process in the surrounding membranes of the medulla. This edema might last for years, or it might either disappear or terminate in a real myelitis. If the latter occurred, then the patient had permanent paralysis, whereas in the first instance the motility returned and the patient recovered.

He referred to the treatment of Pott's disease as advocated by Calot about eight years ago.

As to the treatment of paralysis, he mentioned laminectomy, saying that most of the surgeons who had operated on cases of paralysis by laminectomy had said that the paralysis disappeared independently of the operation that had been performed. He had seen two cases of paralysis in Pott's disease treated by the Calot redressment, and he was convinced that this treatment was very effective for paralysis. At all events, it saved patients from surgical intervention which might be fraught with great inconvenience and serious results.

Dr. Ridlon said, in referring to the remarks of Dr. Harris, that an abscess should not be interfered with unless it made the patient sick, no matter whether it was three inches, or one-eighth of an inch, from the surface. If, however, it made the patient sick, it should be removed.

The symposium was further discussed by Drs. Wallace Blanchard, Frederick Mueller, Alexander C. Wiener, Edwin W. Ryerson, L. L. McArthur and John L. Porter.

A clinical meeting was held April 6, 1904, with the President, Dr. R. B. Preble, in the chair.

Aneurysm of the Aorta.

Dr. Frank Billings: This patient is 45 years of age; resides in the city; bricklayer by occupation, and was born in the United States. He was admitted to the Presbyterian Hospital on the 29th of January, at which time he gave the following history: His father died at the age of seventy from some unknown cause; mother died at the age of forty following childbirth. Two brothers and one sister are living and well; no brothers or sisters dead. There is no family history of tuberculosis, of malignant disease, or of heart disease. The patient is the father of five healthy children, the oldest thirteen, and the youngest four. He has had the diseases of childhood. When nine years of age he had an attack of what he called "typhoid pneumonia" which confined him to bed for a period of three months. He made a complete recovery from this. When eighteen years of age he had an attack of specific urethritis which lasted for two or three weeks, after which he was well. He denies any other venereal infection. Previous to the beginning of his illness he worked at his trade steadily for twenty-seven years. While his work has been heavy most of the time, he has never had to use any violent exertion at any time. He uses alcohol in the form of beer and whiskey in moderate amounts; he drinks on an average not more than one drink a day; he has drank none during the last ten months. He smokes a pipe moderately; uses tea and coffee in moderate amount. He has lost thirty-five pounds in weight within the past year.

Six years ago the patient first felt a sharp pain in the region of the right shoulder which came on suddenly while he was at work. He describes this pain as severe, beginning in the anterior portion of the chest, about an inch to the right of the right nipple, and passing directly backward through the shoulder, and from the shoulder blade extending downward along the side of the chest, and sometimes across to the opposite shoulder. Pain was not increased at that time by motion of the shoulder joint. At first, the pain would last for a period of from one day to a week at a time, and then it would disappear for a month, but gradually increasing in severity and frequency of recurrence until fifteen months ago, since which time it has been continuous and patient has been incapacitated for work. About a month ago, after patient stopped work, he noticed that his voice was failing, and thought this was due to having taken cold. At about the same time dyspnea came on, which was worse on exertion. This pain at the present time is continuous; it is of a dull, aching character, and is made worse if the patient should take cold or if he occupies a cold room, or if he walks or stands for a long time. It is relieved by sitting down or by leaning forward. It is always worse in cold weather. His appetite during this time has been fairly good; bowels usually constipated.

Physical examination at the time the patient was admitted to the hospital was practically the same as it is now, except that the symptoms and signs are a little more marked now than they were then. I will not read what was said at that time, but enumerate symptoms as I go on, excepting this: His pulse has been rapid since admission. The first night it was 100 to 108. Now his pulse ranges from 80 to 100. His temperature has been slightly elevated, sometimes subnormal. It has reached 99°, but has never been a febrile temperature. The urine on admission was concentrated, the specimen having a specific gravity of 1038, with a faint trace of albumin, but no casts were found. There were many leucocytes found in the specimen. A twenty-four hour collection made soon after his admission gave only 520 c.c., with a specific gravity of 1035, a faint trace of albumin, but no sugar, no casts, many squamous epithelia; a large number of leucocytes, but no red cells; urea, 3.4 per cent, 17.6 grams in twenty-four hours, and 42 grams of total solids. Blood count on admission showed 5,800,000 reds, hemoglobin 80 per cent and 9,440 whites. His blood showed 125 milligrams pressure; another blood pressure taken three days later showed 115 mil-

ligrams. A sphygmogram shows the difference in the pulse tracings, the left pulse tracing being much less in amplitude than the right. A tracheal tug is present.

As I have said, physical examination made at the time of his admission was practically the same as that of today. There is not much to be seen excepting perhaps the left side of the chest is a little more elevated than the right in the mammary region. The internal mammary vein is not enlarged in any of its branches. The radial pulses differ; one can easily get a difference with the patient in any posture, sitting, lying or standing, and the left is much smaller than the right, and the waves not as distinctly felt. The apex beat of the heart cannot be seen or felt. I have outlined the area of percussion dullness, which extends pretty near to the middle of the clavicle on the left side. On the right side dullness begins at the sternal junction with the clavicle, and is easily ascertained, so that we have it extending down to the sternum in the direction I show you, and across in this way (indicating). It marked about the area I have shown you when he was admitted, but now the area of dullness extends fully one inch to the left of the line when he was admitted. On listening over this area there is nothing to be heard excepting a fast heart beat, with the long interval of the heart beat diminished. There are no murmurs to be heard; no thrill to be felt. Associated with the history is the change in the patient's voice which he noticed himself, and on laryngoscopic examination it has been found that the left vocal cord is paralyzed and motionless due of course to paralysis of the left recurrent laryngeal nerve.

Let us review briefly the symptoms in this case. First of all, pain, which was intermittent at first, and perhaps had something to do with his work, being aggravated by cold, standing, or walking, but gradually becoming in time continuous and decidedly aggravated by physical effort and associated later with shortness of breath. The pain runs only to the shoulders, and associated with it we have paralysis of the left vocal cord.

I will now show you some skiagraphs of this case, one of which is taken from the front, showing a shadow to the left, almost in the line of the apex. Another was taken from the back which throws a shadow on the opposite side. In this skiagraph, which was taken with the patient lying on his back, you can readily see a shadow, beginning at the clavicle, and recognize the fact that dullness would begin at the clavicle on the left. On the right side, it begins at the sterno-clavicular junction, and runs almost vertically along the sternum. On the left side there are seemingly little nodules or excrescences upon the sac itself. It has been suggested by Dr. Smith who took these skiagraphs that there is possibly a deposit of calcium salts at these points. It can hardly represent anything more than an irregularity in the wall of the sac.

This is a plain case of aneurysm of the transverse arch one which requires no differentiation from, for instance, mediastinal tumor.

Patient has improved since he has been in the hospital, because of the rest and diet he has had. He is allowed to have all that his appetite craves. He is not allowed to take much fluid white eating, but drinks a good deal of water between meals. His bowels have been kept open. He has been placed on ten grain doses of iodide of potassium. Chloride of calcium was later added to the iodide of potassium, hoping that it would increase the coagulability of the blood, and thus give an opportunity for improvement by the formation of a clot in the sac.

Dr. Robert H. Babcock: This man is 53 years of age, Irish, a laborer by occupation, and has been an inmate of the Cook County Hospital for the past seventeen months. He gives a rather meagre history prior to his present illness. The family history is negative. As to personal history, he admits having had gonorrhea at the age of nineteen. He denies syphilis, and gives a history of no other important disease. He states that his present trouble began a little over two years ago with weakness and inability to work, associated with difficulty in breathing and pain. On inquiring more carefully into the nature of the symptoms, it was found that the dyspnea and pain were present only during exertion, and ceased with the cessation of effort. Pain was felt in the lateral aspect of both halves of the chest, and is described as having been a drawing together of the chest. He was admitted, after having suffered more or less for a year, to the Presbyterian Hospital, October, 1902, and was very ill with symptoms evidently due to stasis. He got better, left the hospital, and was admitted to ward 8 of the Cook County Hospital the early part of December, 1902, and has remained there until the present time. His condition on entering the hospital was very grave. He was edematous, and suffered from attacks of dyspnea which were evidently paroxysmal in nature, coming on with considerable frequency, recurring at short intervals, and lasting in some instances as long as two or three hours. He describes these as attacks of suffocation, which seemed to start in the lower zone of the thorax and extend up to the throat, and during which attacks he felt as if he would suffocate. A description of these attacks suggests that they were due probably to irritation of the recurrent laryngeal nerve, and were of the nature first described by Dieulafoy, and of which illustrative cases have been reported by our President, Dr. Preble. In time these attacks of dyspnea subsided and gave way to more persistent shortness of breath which, however, now are not very urgent except on exertion. That suggests to my mind that in time the pressure upon the recurrent laryngeal nerve produced paralysis. In February, a year ago, patient had a febrile illness, with symptoms of bronchitis of rather short duration. In April, a year ago, he was again very ill with symptoms of great pressure and suffered very much from dyspnea and insomnia, but after three or four weeks got better and at the present time he is tolerably comfortable.

His present symptoms are chiefly those of dyspnea of effort, etc. He no longer suffers from pain. Within the last two months or

thereabouts he has noticed a change in his voice. It is husky, and as you observe, his cough has taken on a peculiar character. (Patient coughed.) It is a loud, rather brassy cough at times, although when I saw him last week his cough was quite toneless on that day. His gastro-intestinal tract is not disturbed. He sleeps well; he has no elevation of temperature.

When we come to inspection of the chest there are some things that are quite noticeable. The first thing is some distention of the venules and veins on the upper portion of the left thorax, but not on the right side. Close inspection also shows prominence in the region of the right clavicle, and when looked at, especially from behind and downward, the clavicle seems to be lifted upward and forward with each cardiac pulsation; also there is observable a pulsation in the right infraclavicular region. The apex beat is situated downward and to the left, as has been shown by some marks on the skin, about the sixth interspace, and an inch or so outside the nipple line. There is some epigastric pulsation, but I do not know whether it is visible. Close inspection of the face does not show cyanosis or evidence of much pressure except in the eyes. The pupils were described to me this morning as noticeably small and reacting very feebly to light. This suggests pressure upon the cervical sympathetic, and partial paralysis of the sympathetic fibers distributed to the iris. Palpation confirms the results of inspection. One can appreciate with the hand this lifting of the right clavicle, and can also appreciate the strong pulsation in the neck which is visible above the clavicle, and can appreciate that that pulsation is separated from the clavicle by an interval in which one cannot feel any pulsation. This pulsating vessel is therefore the subclavian displaced upward. The apex beat is palpable, is rather feeble. There is no thrill. Epigastric pulsation is very plainly perceptible, and the liver is palpable down to a distance of three fingers below the costal arch. Bimanual palpation detects a feeble pulsation in the aortic area below the right clavicle. Palpation of the radial arteries is interesting, since it shows that in this case there is an inequality in the pulses. The pulse in the left wrist is much smaller and feebler than the right. Want of uniformity in the two pulses of the wrist does not of itself signify necessarily aortic aneurysm, for there may be local causes for it. If the vessels away up the arm and in the neck are found correspondingly altered, then it becomes a strong corroborative symptom taken in connection with others. In this case it is found that not only is the left radial small and weak, but so also are brachial, axillary and subclavian. It is further noted that the pulse of the right wrist, which is of fair volume, is slightly collapsing, and a capillary pulse can be seen and felt in the fingers. The veins of the arm, as you see, are rather turgid. I note also the condition of the arterial coats. They are very stiff, a little bit nodular and tortuous, as is the condition in all of the arteries of the upper extremities. The percussion areas of dullness were detected and outlined this morning. The one up above here (indicating) starting to the left of the sternum descends obliquely, crosses the sternum and runs up here to the right, and that is separated by an area of comparative resonance from the area of dullness which starts at the right sternal border, as nearly as I can determine, passes out to the left outside the nipple, and down. The upper border of the heart is at the upper border of the fourth rib. It is abnormally low, and suggests that the heart is pushed downward and to the left, as we know is so often the case in aneurysms of the arch of the aorta. The position and shape of the heart indicate a dislocation to the left, but the left border of the heart runs so far outward as to suggest some hypertrophy of the left ventricle. Hypertrophy of the heart is not caused, as is popularly supposed, by aneurysm *per se*. There must be some other factor produced by the aneurysm which in itself is capable of producing hypertrophy. And in this case there is an insufficiency of the aortic valve which is capable of producing hypertrophy and dilatation of the left ventricle, and that probably explains the great size of the heart to the left. The cause of this aortic insufficiency is probably to be found in pressure. I might say in passing that there are two modes of its production in these cases. It is extremely common in cases of aneurysm of the arch of the aorta, and in some cases it is probably due to an actual stretching of the aortic ring. In other cases there is pressure made by the sac upon the basal portion of the heart at the region of the aortic opening in such a way as to cause a muscular insufficiency of the aortic valves. Which of the two is present here is not easy to say.

I should add that percussion of the lungs is practically negative, except that possibly there is a slight diminution of resonance over the left half, especially over the lower portion of it. Breath sounds over the left lung are diminished somewhat, as compared with those on the right side. On auscultation, starting at the apex beat, one hears muffled heart sounds. They are feeble, and the first is accompanied by a feeble murmur. Passing upward to the aortic area one finds in the third interspace to the right heart sounds are heard plainly. The first sound is somewhat muffled and obscured by a murmur. The second is ringing and is also accompanied by a faint murmur. The sounds are transmitted abnormally far outward and downward, being heard with great distinctness internal to the right nipple. At the left the pulmonic sound is accentuated. Over this area of dullness, which represents the situation of the sac, there is no distinct bruit heard, a feeble bruit perhaps. In the neck on the right side there is one distinct arterial tone, whereas on the left side there are two. One can detect a specifically interesting phenomenon when he auscultates in the mouth. When the patient holds the bell of the stethoscope between his teeth and stops breathing for a moment, two murmurs of great harshness are plainly audible, and are the audible expression of the same murmurs which one hears more feebly down in the chest.

With reference to the examination of the

larynx, an attempt was made by my interne to make an examination of the larynx the other day, but he found it impossible to get a good view, due largely to the fact that the patient's throat was unusually sensitive, even though it had been cocainized, and also the epiglottis could only be lifted to an angle of about thirty degrees, so that he was unable to satisfactorily inspect the interior of the larynx.

This is plainly a case of aneurysm of the aortic arch, and cannot be mistaken for anything else, on account of the clearness and definiteness of the signs and symptoms.

The chief question of interest is, What is the location of this aneurysm? It seems to me the aneurysm is unquestionably one of the transverse arch. This is borne out by the character of the symptoms, especially the fact that there is dyspnea rather than pain, and that there are evidences of pressure upon the recurrent laryngeal nerve. I might mention here what I forgot to say in my previous remarks, namely, that tracheal tug is faintly present. When the neck is strongly distended, one can detect a distinct, though not pronounced, downward pull of the trachea, corroborative evidence merely of aneurysm of the transverse arch, but not by any means a pathognomonic sign, as was once supposed.

This case is interesting from several standpoints. There is no history of syphilis, but there is a history of hard labor and of the immoderate use of alcohol in earlier life, and perhaps the etiology of the case is to be found in the degenerative changes in the coats of the aorta produced by these two factors, although many pathologists deny that aneurysm can be produced by sclerosis merely, unless it be of syphilitic origin. The case is interesting, too, from the fact that there are no distinctive signs of pressure effects upon the circulation. There is no great distention of superficial veins, as in many cases, and what little disturbance of circulation there is in the liver and in the internal veins might very well be ascribed to the changes which have been produced in the heart. Probably pressure of the sac itself exerts a considerable influence in the production of stasis, although there are no marked evidences of pressure upon either vena cava. The case is likewise interesting from the fact that the prolonged rest in the hospital, patient being in bed for considerable periods of time, and has not been subjected to conditions that would aggragate the disease, has caused not a marked or rapid progress in the growth of the sac. In fact, the record of findings, when the patient entered the hospital, was very largely that of today. The great difference is found now in the changes which have taken place in the voice and some evidences of greater internal pressure. The case can be classified as one in which the aneurysm produces both subjective and objective signs.

The treatment has been the ordinary routine treatment of symptoms—rest in bed, rather light diet, iodide of potassium, and then treatment symptomatically as occasion requires.

Dr. C. A. Elliott: This man is fifty-four years of age. He belongs to a family of mechanics. His father and mother both died at advanced ages. He has had six brothers and sisters, two of whom are dead, one of Pneumonia, and one by an accident. All of the others are living and well. His wife died five years ago of insanity following an operation for ovarian tumor. He has one child, twenty-one years of age, healthy and a professional athlete by occupation. There is no history of aneurysm, syphilis, tuberculosis, or malignant tumor in the family. He was born in Kentucky in 1850, and has lived in Chicago off and on ever since 1870. As a young man he was employed as a machinist and blacksmith. For seventeen years, until the beginning of the present trouble, he has been a professional athlete. For two years he was a trapeze performer and tumbler in a traveling circus, otherwise employed as a pugilist and trainer. At one time he kept a school of physical training. His habits are good; he drinks occasionally and smokes daily, but not to excess. His digestion and appetite are good. His bowels are regular. He has lost ten pounds since the onset of the present trouble although he states that he has been gaining in weight of late.

As to previous illnesses, he had gonorrhea at the age of twenty-four, otherwise has never been seriously sick. At thirty-seven after a pugilistic contest, in Salt Lake City, he vomited a half pint of blood. He denies ever having had syphilis.

The present illness is of four and a half years' duration. A diagnosis of aneurysm was first made two years ago. The first symptom he complained of was shortness of breath. This has been present from the start, and is the most important feature of the case to him. Pain has been present much of the time:

First. Felt in the right lower chest wall which he describes as being similar to that experienced by the ends of a broken rib being rubbed together. This was present for about a year, but it has not been present now for two years.

Second. Painful sensation as if the chest were squeezed in a vise, the scapulae being ground together. This was present for two years, but has been absent for the last six months.

Third. Shooting pains in his left arm, prominent two years ago, and occasionally felt at the present time.

Fourth. Pain in the lumbar region on the right side which is constant at the present time.

He has had some difficulty in talking, but this was more prominent six months ago than it is now. At one time he had a peculiar choking sensation which he experienced upon swallowing, but that has not been present for six months, and there has not been any obstruction to the passage of food, nor pain on swallowing at any time. A tumor was noticed two and a half years ago. He stated that it was considerably larger eighteen months ago than it is at the present time, but that for the last six months the tumor has been growing larger. A

whizzing noise is heard by the patient at times in the chest. He has no cough.

He has been in a number of hospitals, and during a stay of three months in one of them, a year and a half ago he received two gelatine injections. The first one was in the back between the scapulae. He stated that six ounces of a mixture of which he does not know the percentage was used, and this was followed by local pain, but no serious after-effects. A second injection was given in the right leg in the popliteal space, the amount being six ounces. This was followed immediately by pain, swelling, and the leg became infected. It was four weeks before he recovered from this infection, and at one time it was thought that it might become necessary to amputate the leg. Upon leaving the hospital at that time he was in bad shape, but has been gaining strength for the last year and a half, and the pain from which he suffered at that time has almost entirely disappeared. He has taken large doses of iodide of potassium and nitroglycerin over long periods of time.

Upon examination a pulsating tumor may be seen in the left chest wall. This is ten centimeters in diameter and extends from the second to the fourth rib just to the left of the sternum. The apex beat is to be seen in the sixth interspace, about an inch to the left of the mammary line. A generalized arteriosclerosis is present, with pulsations of all of the superficial arteries. There is a capillary pulse that can be seen and felt. The pulses at the wrists show characteristic water hammer pulsation and a marked difference in the two sides; on the left, the pulsation is not as prominent as it is on the right and is slightly delayed as shown by sphygmographic tracings taken simultaneously. It is almost impossible to detect it, yet with the instrument it is possible to demonstrate a slight delay in the left pulse.

Upon percussion the heart shows an inverted pear shaped area of dullness, fifteen centimeters in diameter at the level of the third rib, extending three centimeters to the right of the sternum and comes to a point at the apex in the sixth interspace one inch to the left of the mammary line. The fluoroscope shows a definite boundary of the right side of the heart three centimeters to the right of the sternal border, but the area over the tumor does not show so well in outline on account of the constant pulsations of the aneurysm.

Upon auscultation at the apex there is heard a harsh, roaring systolic murmur, and a soft diastolic murmur. Over the aortic interspace there is a double to and fro murmur, both systolic and diastolic. Over the tumor, two murmurs may be heard, systolic and diastolic. Over the posterior aspect of the chest at the level of the eighth rib on the left side can be heard two distinct murmurs, systolic and diastolic. Upon auscultation over the lower parts of the chest many rales may be heard, and at the left side of the heart occasionally a squeaking rub is to be heard. A tracheal tug is easily demonstrated. Skiagrams showing especially the aneurysm and the dilated right heart have been taken and a number of pictures will be shown. Urinalysis shows a large amount of albumin, with hyaline and granular casts.

To me there are a few interesting points in this case. First. The patient being an athlete, it seems fair to consider stress and strain to which he subjected himself, the etiological factors back of his case. Second. He seems to be much better now and the size of the tumor less than it was two years ago. (Several skiagrams and sphygmographic tracings were passed around).

Dr. Charles L. Mix: The patient whom I have to show this evening is a man, 49 years of age, who came to the Post-Graduate Clinic a week or so ago with the information that he had heart disease, and desired to get a little benefit, if it was possible for us to give him any. He informed me that about three months before he was suddenly seized with an attack of severe pain in the left side, clearly paroxysmal in character. Personally he regarded it as pleurisy. The pain did not extend down into the arm. This attack persisted for a little while disappeared, and then recurred after a time. He has had three paroxysms altogether. In addition to that, he has been troubled with a certain amount of dyspnea.

We did not bother about getting his history, but as soon as he had removed his clothes and I had seen his chest, I asked him if he had ever had specific trouble, and he told me that he had. If you will stand at the patient's side and put your hand against this region (indicating), you will feel a heave. Curiously enough, if you put your hand upon his chest and expect to feel a thump, you do not feel it: the only thing which you do feel is a heaving, which you can also readily see. This shows that the maximum amount of aneurismal disturbance is on the right side of the chest. You know the old rule, the nearer the heart, the more frequent the aneurysm. But curiously enough, the aneurysms which have been shown tonight have been far from the heart. Here is one which evidently lies near it. Furthermore, there is dilatation of the venules which one sees in cases of adhesive pleurisy, in some cases of mediastinal tumor, pericarditis, and sometimes in emphysema. In this instance they are scattered well around the chest.

So far as dullness is concerned, you readily see how dull this area here is (indicating). It is absolutely dull. It is hardly necessary for me to map out the absolute line of dullness. The apex beat is outside of the nipple line suggesting hypertrophy, dislocation, or dilatation, and probably in this case there may be all three present. The hypertrophy, which is secondary to arteriosclerosis, which was a primary affair, is probably of some years' standing. The dilatation may be due to a certain amount of myocardial trouble which is beginning to develop in the heart tissue.

When we feel the radial arteries we find conditions the reverse of those that have been mentioned in the previous cases. In all three preceding cases the left radial was weak, caused by the aneurysm producing either pressure or distortion of the subclavian artery, thereby weakening the radial pulse. In this instance it

is the right pulse and the right carotid which are weak, because the distortion which has taken place in the aorta has involved the opening of the innominate artery, thereby decreasing the strength of pulsation. In other cases shown, although nothing was said about it, I should think that inasmuch as there is in each case a pressure by the aneurysm upon the left bronchus, there must be definite respiratory changes on the left side of the chest. This patient does not show them; on the contrary he shows weakness in breathing on the right side, and this is curious on this account. The ascending portion of the aorta has the pulmonary artery in front of it; behind it lie successively the right auricle, the right pulmonic artery, and the right bronchus; so that it is difficult to see how there can be reduction of breath sounds upon the right side of the chest in aneurism of the ascending aorta. Nevertheless, he seems to show it. In all classical descriptions of aneurism, the reduction of breath sounds is on the left side in all those cases in which the aneurism is situated at the transverse arch or in the descending portion.

This patient shows a certain amount of delay in the radial pulse on the left side, due to the aneurism of the ascending aorta. The tracheal tug is slight. You can barely get it, on account of the fact that the transverse arch is not involved, but rather the ascending portion. If the transverse portion is involved, hooking around the left bronchus as it does, it gives a first-rate tracheal tug.

Aside from what is found on inspection, and percussion, auscultation yields very little and there are no murmurs, and in this respect the case resembles the one shown by Dr. Billings. It is a fact that many aneurisms are not attended with murmurs, and this is one of them. Moreover one does not always hear in aneurisms any diastolic accentuation, many existing without it. In some cases you hear only two dull sounds; in others you hear nothing, such a case resembling mediastinal tumor. The cough is characteristic, and by its qualities alone it might safely be judged that he is suffering from aneurism or from some laryngeal trouble. We have not made an examination of his vocal cords; that could be done, but it would be only a refinement in diagnosis. The cough is not due to pressure upon the left recurrent laryngeal nerve, but is more likely due to possible involvement of the right laryngeal nerve as it passes around the right subclavian artery because in some of these cases aneurism of the ascending aorta produces laryngeal disturbance through the right, and not through the left, recurrent laryngeal nerve.

So far as the possible diagnosis of mediastinal tumor in this case is concerned, I must say, I do not think it holds, in view of the presence of a pulsating tumor. Furthermore if you compare the radial pulses you will note a difference not easily explained by the hypothesis of a mediastinal tumor. Moreover, in this case, there are no particular signs of pressure from mediastinal tumor in the sense of unilateral edema or cyanosis.

There is a certain amount of fulness here above the clavicle, which possibly can be regarded as due to secondary aneurismal disturbance, which has long since been described. Aneurisms frequently press upon the innominate veins and produce a certain amount of turgidity in the innominates as far back as the valves of the internal jugular and the valves of the subclavian; as is well illustrated in this case. It will be recalled that signs of pressure upon the right bronchus were noted in auscultation of the chest. Very possibly the pressure of the aneurism upon the right auricle explains the abnormal fulness of both innominate veins, and the bulging of the supraclavicular spaces.

Dr. Galloway reported a case of **Aneurysm.** (Report not received.)

Dr. R. B. Preble: I desire to present the X-Ray plate of a patient whom I expected to have here tonight. My sole reason for reporting the case is not that it presents any extraordinary features in the way of aneurysm, but rather because it presents so few.

The patient appeared at the clinic some two weeks ago complaining of dyspnea upon exertion and upon reclining, and in addition to that, upon inquiry, he told us that he had been suffering for weeks in this way, and had some edema. He had edema of the eyelids, which was manifest in the morning, and edema of the feet, which was manifest at night. During the night the edema of the lower extremities disappeared, while the edema of the face appeared, and vice versa, during the day.

Upon physical examination of this patient, a colored man, we found that he was well nourished, but the first thing that impressed one upon inspection was the extreme tortuosity of the brachial vessels, with a high degree of arteriosclerosis, although forty-three years of age. By the way, it strikes one as singular that this is the first colored patient with aneurysm that has been reported this evening, because aneurysms are more common among the colored race than among the whites, so far as my personal experience goes. All of the cases that have been presented tonight have been white.

The man is a hostler by occupation, and denies a syphilitic history.

Upon examination of the thorax one is struck at once by the fact that the heart is considerably enlarged, the apex beat being situated an inch and a half to the left of the nipple line, and in about the seventh interspace. It is strong and quite regular in its action, and not particularly accelerated. On percussion we are impressed with the fact that behind the sternum is an area of distinct dullness. This area continues downward until it fuses with the heart, which, upon percussion, proves to be enlarged considerably toward the left side. There is no evidence of enlargement to the right. Examination of the heart by auscultation shows that its tones are pure and regular, with the exception of the second aortic tone, which is associated with a diastolic murmur of minimal intensity. Examination of the pulse with this murmur in view shows that the man has an indefinite and indistinct capillary pulse, and over the femoral vessels, we have the Duroziez phe-

nomena, which occur so frequently in cases of aortic insufficiency. Examination of the urine shows that it contains a large quantity of albumin, and microscopically contains casts of all sorts. The case was interpreted in this way, that we had to do not with a diseased heart or with a diseased kidney, but a disease of the blood vessels, with cardiac and renal changes secondary to it; that these arterial changes had brought about a minimal degree of insufficiency of the aortic valves, and in addition the same changes had so weakened the aortic wall that the aorta was dilated. Whether or not this should be considered simply a case of dilatation of the aorta or an aneurysm of the aorta, appears to me is a matter of play upon words. It is a matter of no consequence whether we describe it as a dilatation or an aneurysm.

A skiagraph shows enlargement of the heart to the left, and to the left of the sternum is a faint shadow by no means as distinct as shadows from aneurysms frequently are, but sufficient to show that the aorta is materially increased in its transverse diameter, and sufficient to warrant us in calling the case one of aneurysm. If anyone should prefer to call it dilatation of the aorta, I should not quarrel with him.

The case is in no way remarkable from an aneurysmal point of view, but it draws attention to the fact very distinctly that in many of these cases aneurysm is merely an incident. In this case it is an incident in the course of serious generalized disease. There are changes in the heart itself, changes in the kidney, which are far more important to the patient than the changes in the aorta.

I might say, before yielding the floor, that the particular purpose in having these patients here tonight, and the number shown to you could be multiplied, was to draw renewed attention to the fact that aneurysms of the aorta are not uncommon. No two cases are alike, and anybody who thinks, in order to make a diagnosis of aneurysm, he must have auscultatory phenomena coming on very early is mistaken, becuase many of the most serious cases of aortic aneurysm, who present themselves, have very few or no auscultatory phenomena. Later on, I should like to draw attention to certain other phenomena in connection with these cases in the discussion.

General Discussion.

Dr. Frank Billings: I did not name many of the negative symptoms present in the case I presented, simply because I did not desire to take up so much time, nor do I wish to do so now. The chief point I would like to say something about is dilatation of the aorta spoken of by Dr. Preble, and which you may call aneurysm in a certain sense, fusiform in character, and sacculated aneurysm. In the last few years I have had several cases in whom I have made a diagnosis of dilated aorta, and of all of the cases that have come to autopsy (more than half of them) that diagnosis was verified. Of the cases I have observed, all but one have occurred in elderly people, much older than any of the patients that have been exhibited tonight, in people in whom we would expect to find atheroma, and sclerosis of the vessels; not necessarily in people who have led laborious lives, who have over-exerted themselves, not in people necessarily who have been unduly familiar with the flowing bowl, as is common in patients who suffer from aneurysm. Among the main things noticed in taking the history was an incompetent heart; it made no difference whether it was dyspnea alone, or associated with pain in the chest. The physical signs show in every case, I think, dullness over the upper sternum laterally, from right to left, and extending from the heart upward, and usually toward the right sternoclavicular junction. The aorta could not always be felt in the suprasternal notch. There was not necessarily a murmur, but in many of them there was; if not a murmur, there was an accentuation of the second aortic tone. If the aortic ring was stretched, or if the aortic valves were sclerosed and shrunken, there would would be aortic regurgitation. It is not necessary for me to mention the ordinary signs, including even hypertrophy of the left ventricle. Those are the main things and differ entirely, so far as pressure symptoms are concerned, from a sacculated aneurysm. As Dr. Preble has said, it does not make much difference whether you call the case one of dilatation of the aorta or aneurysm of the aorta. Percussion dullness over the upper sternum is the main thing, and either accentuation of the second aortic sound, or the diastolic murmur which goes with it.

There is one other condition which I have run into and made a mistake twice. I recall the case of a man in whom I made a diagnosis of aneurysm, because he had dullness extending high up along the sternum, not as markedly as in the case which I presented tonight. The area of dullness was not as wide, but with this dullness there was some hypertrophy of the left ventricle, with a murmur at the apex that was like a mitral insufficiency murmur, systolic in time, and transmitted to the left. He also had an aortic murmur, diastolic in time, that was not constant. His pulse was slow, with the Stokes-Adams phenomena. His pulse was as low as 22 per minute, and in all the time I observed him it was never more than 40. I thought he had an aneurysm of the aorta. I took a skiagram of him, showed the patient to the members of the Illinois State Medical Society as a case of probable aneurysm of the aorta, with Stokes-Adams phenomena. He died suddenly at the hospital. He tried to get up from bed and dropped dead on the floor. Post-mortem examination revealed an enormously dilated heart, and both ventricles dilated to the extent that the heart was incompetent. There was mitral insufficiency, relative only, not a real one, and the aortic valves were apparently competent. The interventricular septum was stretched and thin, like a thin piece of paper. This case was worked up by Dr. Basso, the pathologist of the hospital, who found that the more recent pathologists speak of the Stokes-Adams phenomena, as undoubtedly due to this stretching and thinning of the interventricular septum, with dilatation of the heart.

At the Presbyterian Hospital again I made

a diagnosis of large aneurysm of the aorta, so large apparently that it extended up on the left side of the chest as in the case presented tonight. In that case the radial pulses were different and the difference extended even to the brachial and subclavian arteries, so that there was no anomaly in the size of the radials which would account for it. He had no disturbance of the larynx, so far as paralysis was concerned, but his voice was weak at times, at others it was harsh. He was short of breath; had pain in the chest; had a cough. The pain in the chest was most marked on exertion from an incompetent heart probably, and in this, as in the other case, I made a diagnosis of aneurysm of the transverse arch of the aorta because of the signs he presented. He had murmurs, systolic in time, which could be heard at the apex, and a diastolic murmur which could be heard at the aortic orifice.

Post-mortem examination in this case showed an enormously enlarged and dilated heart, with the left auricle running up the left side of the chest, which caused the dullness in that area.

I have thought it worth while to report these two cases in the discussion, and to point out the mistakes I made.

Dr. Robert H. Babcock: I should like to say, with reference to the case I presented, that an X-Ray picture was taken in the hospital, but I could not learn anything about it. A sphygmographic tracing was not taken, nor a blood pressure register.

With reference to the difference in the two pulses in my case, there is one thing which I omitted to state, and that is, the two common carotids appear to be symmetrical. The difference is in the subclavian and the arteries from that point downwards, which suggests that there is either a twisting or pressure brought to bear upon the subclavian. It is interesting that it should be limited to the subclavian when its origin is not far from the left common carotid.

The point brought out by the President, (Dr. Preble), with refrence to the frequency of aneurysms in colored people is very pertinent, so much so that it is surprising we do not have more cases of aneurysm in colored people here tonight. There is a colored woman in ward 24 of the Cook County Hospital who has probably an aortic aneurysm. In the Johns Hopkins Hospital the colored ward has several cases all the time either aortic aneurysm or of aortic insufficiency. Aortic insufficiency secondary to arterial disease is so common among the colored people that I understand in Osler's service in the Johns Hopkins Hospital they have termed the colored ward the Corrigan ward.

It is gratifying to me to have Dr. Billings make so frank a confession as to diagnostic errors, because I have so many times either slipped up grievously in my diagnosis, or have been absolutely uncertain about it. I take fresh heart when a man of Dr. Billings experience says he has made similar mistakes. It is notoriously difficult in many cases to make an early diagnosis of aortic aneurysm; but when the pressure effects become marked, and there is a visible tumor, the diagnosis is comparatively easy, as has been shown tonight; but in early cases, where the ansurysms are small and deeply seated, a correct interpretation of the case is often absolutely impossible without an X-Ray examination.

Cases of dilated aorta associated with incompetence of the valve are very interesting and often puzzling, but in my experience marked pressure effects are rarely seen.

I believe that in making a diagnosis of aortic aneurysm physicians should be specially impressed with the relative unimportance, from a certain standpoint, of auscultatory phenomena, since when present they may or may not be very characteristic; indeed, auscultatory phenomena are so frequently absent that one must rely on other methods of examination, and physicians should be very careful to examine every suspected case by inspection, palpation, and percussion. I believe inspection and palpation are of the greatest importance in these cases; sometimes even when the aneurysms are small, careful inspection in different lights will reveal some circumscribed area of pulsation or prominence which would escape ordinary observation.

I was gratified recently, while on a visit to Baltimore to see Osler in his out-patient clinic, in which he presented some cases of aortic aneurysm, dwell with special emphasis on the importance and necessity of careful inspection and palpation in these cases.

Dr. C. A. Elliott: I have nothing in particular to add except to point out the fact that the gelatine treatment for aneurysm seems to have dropped out of use. In the case I reported tonight the gelatine treatment had no beneficial effect, and only resulted in harm.

Dr. Charles L. Mix: I have nothing further to add except to say, that I have been accustomed to look upon the chief signs of dilatation of the aorta as being the ones to which Huchard first called attention, namely, dullness in the second interspace to the right of the sternum; occasionally, but not frequently, in the third interspace to the right; and quite pronounced pulsation in the suprasternal notch. This pulsation in the suprasternal notch is due to the fact that the aorta dilates in two directions, longitudinally and transversely. It stretches in length, so to speak, so that the arch rises to a higher level. Anatomically, the summit of the arch is about half an inch from the edge of the suprasternal notch, and it is an easy matter for it to rise another quarter of an inch so as to be easily palpable.

There is one subjective sign to which attention has been called, which, I think, is of some value in dilatation of the arch, and that is a peculiar burning pain. This has been explained as being due to the effect of the stretching of the sensory nerves which are known to lie in the aortic wall. In running for a street car or a train we have all of us doubtless experienced a burning pain beneath the sternum. Schroetter, of Vienna, in Nothnagel's Specielle Pathologie, in writing upon the diseases of the arteries, mentions this symptom in connec-

tion with dilatation of the arch of the aorta. It is akin to the pain of aneurysm, and yet has a peculiar burning characteristic. I am accustomed to ask the patient concerning this symptom, and to look for the two physical signs mentioned—dullness in the second interspace to the right of the sternum which we almost invariably find with careful percussion, and marked pulsation in the suprasternal notch.

Dr. R. B. Preble: I would like to say a few words in regard to diagnosis. One must admit the possibility of error in the diagnosis of aneurysm, and yet this possibility is easily understood. While in a pathological sense an aneurysm is not a tumor, it is in a certain sense a tumor of the mediastinum. The symptoms of tumors which develop in the mediastinum, whether aneurysms or some other form of tumor may be classified as follows: There are physical signs which result from the interpolation into the mediastinum of a foreign body—in this case an aneurysm. There is a second set of symptoms the result of pressure produced by this tumor upon other organs. It makes no difference what this tumor in the mediastinum may be, so far as its exact pathology is concerned, the physical signs are practically the same. There is but one sign which I regard as absolutely peculiar to aneurysm, and that is expansile pulsation; but such expansile pulsation of the thoracic aorta is so rare as to be of little aid to us in making a differentiation. It is perhaps too much to say that all expansile pulsating tumors which appear either anteriorly or posteriorly over the thorax are aneurysms, because it happens occasionally that we see in this area pulsating empyemas, but such cases are so rare that they may be neglected in practice. The same thing may be said of the pressure symptoms, any one of them may be caused by any mediastinal tumor. In view of these facts error is easily made, and yet it should be kept in mind that with the exception of aneurysm all forms of mediastinal tumor are rare, and in cases of doubt the chances are always in favor of aneurysm rather than of some other mediastinal tumor. Of course, if we have to do with a child, in whom aneurysm has practically never occurred, the rule does not hold; but in adult life, it is a good rule to follow.

I think a word might be said in regard to the prognosis in these cases. One would off-hand say that a large aneurysm was more dangerous than a small, yet I think those who have had considerable experience with aneurysms will say that this is not so. Those who have had much to do with the service at the County Hospital will recall the case of a man Howard who has a very large aneurysm of the aorta who has been coming and going year after year, while many other cases with very indefinite signs and symptoms have died there. One may say that the prognosis of aneurysm is determined not by its size, but by its site. There are certain portions of the aorta in which the aneurysms are rapidly fatal, while in other portions of it the aneurysms can develop and attain very large size and continue for years without seriously shortening the life of the patient. Among the serious cases of aneurysm are those which Dr. Babcock mentioned, namely, aneurysms developing in that portion of the transverse arch where the aorta crosses the left bronchus, and where between the aorta and the left bronchus lies the left recurrent laryngeal nerve. In such cases the prognosis is extremely grave because of the great danger of ulceration of the bronchus and fatal hemorrhage.

It may not be out of place to again refer to a case which I reported two or three years ago at a meeting of the Illinois State Medical Society, in which there were none of the ordinary phenomena of aneurysm, but simply evidence of a moderate amount of obstruction of the left bronchus, with irregular paroxysms of dyspnea and dysphagia, the signs and symptoms leading one to infer that there was pressure on the left bronchus where the laryngeal nerve lay across the left bronchus, the irritation of the laryngeal nerve serving as an explanation of the recurrent attacks of dyspnea and dysphagia, pressure on the bronchus being an explanation of the physical signs of the left lung. Such a clinical picture as that can result from any tumor in that region; yet in view of the age of the man, who was about forty, and other phenomena, a probable diagnosis of aneurysm of the aorta was made. This diagnosis carried with it the prognosis of a probable hemorrhage within a short period of time and the subsequent history proved the correctness of diagnosis and prognosis for the man died from a pulmonary hemorrhage six weeks later and only three months after the appearance of first symptom.

Dr. Arthur Dean Bevan: The question brought up by the President (Dr. Preble) of the differentiation between mediastinal tumors and aneurysm of the aorta is interesting to me, and there is one point which has not been mentioned in this connection that I regard of importance, namely, making this differential diagnosis by the X-Ray. We have at the Presbyterian Hospital noted three types of masses within the chest, as shown by the X-Ray, and these present some points which seem to be of great value in making the differential diagnosis. The aneurysmal outline is almost always a regular curved outline, as shown by the pictures exhibited here tonight. On the other hand malignant growths as mediastinal tumors invariably have an infiltrating outline, if primary, as shown by the X-Ray. Other pathological processes in the mediastinum, such as syphilitic and bronchial glands, have an infiltrating or an irregular, curved outline. I think these points are of value in making the differential diagnosis. As an evidence of the difficulties in making this differential diagnosis I want to state that within three years I assisted at an operation in a case in which a positive diagnosis of mediastinal tumor was made by half a dozen good clinicians, aneurysm of the aorta having been eliminated. The mediastinal space was opened with the intention of removing the tumor; the patient died on the table. An immediate post-mortem was made, and it

proved to be an aneurysm of the aorta about the size of a fist.

Pneumococcus Endocarditis.

Dr. Frank Billings: I have had some specimens brought here tonight, and want to say a word or two about them. Both of these cases, of which I have specimens, are cases of pneumococcus endocarditis. The first case was a woman, twenty-two years of age, who gave a history of incompetent heart of about five years' standing, preceding acute symptoms, which brought her to the hospital. There was no history of rheumatism as the cause of heart disease. She came complaining of incompetency of the heart. She had some temperature. There was no sign of pneumonia. Blood cultures were made, and the pneumococcus was found. The woman subsequently died. When admitted to the hospital a loud presystolic murmur was heard at the apex. A murmur was heard later over the lower sternum, but never a systolic murmur which would enable one to make a diagnosis of tricuspid disease. The diagnosis that was made, after the finding of the pneumococcus, was acute endocarditis of pneumococcus origin, with an old probable mitral stenosis. You will observe the form of mitral stenosis in the specimen which I pass about. You will see that it is a funnel-shaped mitral stenosis, and occurring in a woman may be due to chlorosis, or it was congenital. There was also a valvulitis due to acute endocarditis. You can see the vegetations. It was an old endocarditis associated with a funnel-shaped mitral stenosis, as it is called. We sometimes have an acute endocarditis engrafted on an old endocardial lesion. Here was an acute infection by the pneumococcus without a history of pneumonia. As you know, the pneumococcus is a germ that gains entrance into the body, affects not only the lungs as an acute frank pneumonia, but may infect almost any part of the body. It occurs as a septicemia with pneumonia, and in probably many other conditions, with the result that it may cause an acute endocarditis, especially if these be an old endocarditis.

The next case was a boy, eighteen years of age, who gave a history of rheumatism at five and ten years of age. During the second attack there was shortness of breath, or following it, so that we know the boy had an old endocarditis. He was admitted to the hospital on February 27 of this year, and died March 21. He gave a history of incompetent heart, and of illness of an acute character dating back three or four weeks. Patient never had a cough sufficient to say that he had pneumonia, or pain about the chest or back; nor had he had a chill. On examining him after admission it was found that he had some rise of temperature, with a rapid irregular heart; but the temperature at no time during his stay in the hospital was high; 99° to 100° was the usual range, but I believe it ran higher than that once. Examination showed an enormous heart extending far beyond the nipple on the left and on the right side one inch beyond the sternum. The apex beat was plainly seen in the anterior axillary line. There was hypertrophy of the heart, with a loud systolic murmur heard at the apex, transmitted to the left. This murmur was heard all over the heart, and heard also in the back. There was an accentuation of the second pulmonic tone. He had mitral insufficiency with dilatation of the heart. As I have said, he had incompetent heart, shortness of breath, compelling him to sit up. Friction sounds were heard at different times over both sides of the chest. He had pain when he coughed, with bloody expectoration. A diagnosis was made of infarcts of lung. A culture of the blood was made and the pneumococcus found. The diagnosis was then made of acute endocarditis of pneumococcus origin. Post-mortem examination showed the conditions absolutely as made anatomically. He had a large heart, with incompetent mitral valves, with vegetations along the aortic, mitral and tricuspid valves. He had infarcts in both lungs; double pleurisy; infarcts in the lungs, spleen and kidneys.

A regular meeting was held April 20, 1904, with the President, Dr. R. B. Preble, in the chair.

Dr. Sanger Brown read a paper entitled

Hypodermatic Injection of Strychnia Nitrate in the Treatment of Progressive Muscular Atrophy.

Sanger Brown: Soon after the publication of the new edition of Quain's Dictionary of Medicine in 1895, I was surprised to notice in the article on progressive muscular atrophy, by Sir William Gowers of London, how hopefully he expressed himself regarding the value of strychnia nitrate given hypodermatically in the treatment of that disease. My surprise was the greater because he had previously stated in his text book on Diseases of the Nervous System the commonly accepted view that the malady lay without the range of therapeutics.

I do not know to whom belongs the credit of originating this method and first asserting or demonstrating its value, but since it came to my notice I have embraced every opportunity of using it, and while my results have not been so happy as Prof. Gowers' statements in the article above referred to might have prepared me to expect—and according to the last edition of his text book above mentioned, he has modified his formerly expressed views somewhat—they have nevertheless been highly satisfactory in some instances, and prompt me to publish the clinical notes given below. Furthermore, I might add, judging from conversation with my confreres and the perusal of current medical literature, this measure of treatment has not received anything like the attention it deserves.

For an adult the dose should be 1-25 of a grain once daily for six weeks, resumed after an intermission of two weeks, and so on until several courses have been taken. Though many patients can bear a larger dose than this without exhibiting unpleasant symptoms, I have had better results when I did not yield to the impulse sometimes experienced, to administer a larger quantity. Possibly a certain amount of

the drug might act as a tonic and restorative to the degenerating neurone while more might accelerate the process of decay.

It appears that no other form of strychnia than the nitrate given hypodermatically, and no form whatever, not even the nitrate itself, given by the mouth, can influence the course of the disease favorably. That the nitrate is a comparatively volatile substance and that it is not exposed to the action of the digestive secretions is somewhat suggestive of a possible specific incidence when given subcutaneously.

Apart from the muscular dystrophies, different authors have separated progressive muscular atrophy into types according to (1) age, (2) distribution of the atrophied muscles, (3) condition of affected muscles as to tonicity and (4) supposed nature of the pathological process affecting the neurones concerned; consequently in the literature are found such terms as (a) juvenile type, (b) progressive bulbar paralysis, scapulohumeral type, (c) amyotrophic lateral sclerosis (tonic or spastic type) and (d) chronic anterior poliomyelitis.

The propriety of such divisions cannot be discussed here. They are certainly not yet founded upon a firmly established pathological basis. Inasmuch, however, as they all present positive evidence of muscular wasting, due to destructive changes in the peripheral motor neurone no principle of medical nomenclature is violated by, for the present, at least, employing the term progressive muscular atrophy as properly applicable to them all.

Viewed from this general point, there are wide variations in symptoms, but so far, my rather limited experience with the treatment herein described does not prompt me to attempt to group cases with reference to their curability, though it would not seem unreasonable to expect that future research might furnish data from which such calculations could be made. Again, it would appear that the variable nature of the pathologic process going on in the neurone body, as inferred from the progress of the symptoms in different cases, suggests a variation in the dosage. That is to say, in a rapidly progressive case, where the destructive (degenerative or perhaps even inflammatory) process was comparatively active, strychnia given to the extent of causing twitching or hypertonicity in healthy muscles by its effect on their respective neurones would almost certainly add fuel to the flame, albeit just here the practitioner might feel impelled to push his remedy. Moreover, in these rapidly advancing cases my success has been least, and it does not now seem to me improbable that a much smaller dose than I gave would better have been employed, if indeed any degree whatsoever of this sort of medication could have been beneficial.

Case I. Referred to me during the summer of 1896, by Dr. T. M. Hardie, whom he had consulted for hoarseness. Man of 25, single, salesman in millinery store. Correct habits, nothing significant in personal or family history. Three or four months before began to suffer from hoarseness, which had steadily increased, and for about the same length of time his left arm had grown progressively weaker, especially noticeable when he had occasion to raise a package to a shelf above his head. Had suffered no pain or paresthesia, and though his appetite had not been as strong as it ought to have been, he had regarded his general health as fairly satisfactory. Examination showed no sensory changes; superficial and deep reflexes normal, and nothing in the viscera or elsewhere demanding comment. The left vocal cord was paralyzed (Dr. T. Melville Hardie). The presence of the left sterno-cleido-mastoid could not be demonstrated, either by inspection or palpation—electrical tests were not made; the upper border of the left trapezius was much wasted, as shown by comparing the contour of the two sides of the neck. The patient was taught the use of the hypodermic syringe and sent home (several hundred miles from Chicago). He was directed to inject strychnia nitrate, grs. 1-30 once a day for six weeks, discontinue two weeks and then resume six weeks more. I heard nothing further from him till March, 1900, when he unexpectedly called to report, saying it was his first visit to Chicago since he had left it to begin treatment. The muscles previously atrophied appeared to be entirely restored. The patient stated that his malady did not progress after the second week, and by the fourth week he had certainly begun to improve. At the end of three or four months he regarded himself as cured and permanently discontinued treatment. In the meantime, there had been some improvement in appetite and general vigor.

Case II. September, 1896. Gentlewoman of 21, single, habits correct; nothing of moment in personal or family history. About three months before first noticed weakness of right hand, especially in buttoning clothing (a defect commonly cited when the disease begins in the hands); soon after some flattening of thenar eminence. Slight paresthesia about radial side of hand occurred early, but patient could not be certain if it preceded or followed the commencement of weakness. The atrophy had steadily advanced and extended to the interosseous spaces and also to the muscles of the forearm. Twitching in the wasting muscles had also been noticed. Three or four weeks before I saw her, the disease had made its appearance in the left hand and followed a similar course to that described in reference to the right. The muscles affected were flaccid and no hypertonicity was apparent anywhere, except that the knee jerks were much increased and there was ankle clonus. I may say here, parenthetically, that this condition of the lower extremities has been accounted for in similar cases and supported by anatomical findings too, by supposing such a lateral extension of the pathological process in the cervical cord as to slightly involve the crossed pyramidal tracts. There was no pain or tenderness, and sensation was not impaired even in the parts where slight paresthesia existed. The general health was satisfactory, and a careful examination revealed nothing demanding comment beyond the condition of the wasted muscles. In them flickering was

frequent and pronounced and degeneration reaction was easily demonstrated.

Though not living in the city, the family physician was present at the examination and the same treatment was advised as in Case I. Ultimately, through involvement of respiratory centers in the medulla, and without any material arrest in the march of the symptoms, a fatal result was reached in about two years. But the treatment was not carried out according to directions, as the physician afterwards informed me. Improvement not appearing as promptly as he had hoped, he soon began to increase the dose and carried it to such point that for several months he gave her "all she would stand," even 1-8 of a grain twice a day.

Case III. June, 1899. Sister of Charity, age 41; a few months before noticed marked paresthesia about radial side of hand, involving thumb and index finger. Somewhat later weakness and wasting appeared in thenar muscles and index finger, the latter growing somewhat small and pointed, as she expressed it. A few weeks before I saw her paresthesia made its appearance in the left hand, as it had previously done in the right, followed by weakness and wasting. The patient was in good health, and had been so throughout. In the hand first affected, perceptible wasting had not extended beyond the thenar muscles and those of the index finger, and in the other only the muscles of the thumb were visibly involved; and these, though distinctly, not greatly so. Degeneration reaction could be demonstrated in the thenar muscles of the right hand, and the superficial and deep reflexes were normal. I saw this case repeatedly at intervals varying from a few weeks to two months for over two years, when the patient was assigned to duty in a distant state. There appeared to be an element of hysteria in the sensory symptoms, inasmuch as while the paresthesia lasted the area involved by it presented variations in the reaction to touch and pin pricks between distinct reduction and normal. The treatment was carefully carried out. Three six weeks courses with intervals of two weeks were given at the outset, and afterwards three six weeks courses at irregular intervals, because the patient fancied she felt a slight return of the paresthesia. One-twenty-fifth of a grain of strychnia nitrate was used throughout. Distinct improvement was noticed after the first few weeks and continued for several months until no atrophy or weakness was discernable in the hand last affected, and the other had grown much stronger, with considerable restitution of the wasted muscles. With the exception of an occasional suggestion of a slight return of the paresthesia, which may have been hysterical and due to over anxiety on the part of the patient, there has been no return of the symptoms.

Case IV. In October, 1900, there came to my clinic at the Post Graduate School, a carriage painter 34 years of age, married and intemperate. He was a well-nourished man and said his general health had been good, except that during the past seven or eight years he had suffered from several attacks of painters' colic, and during about the same period had also on several occasions been affected with lead palsy or wrist drop. He had always made good recoveries from both conditions under treatment, except that for the last two or three years extension in the wrists had not been quite as strong as formerly. About ten months ago the wrists began to grow weaker, more slowly than in previous attacks, and in addition to this the thumbs became very weak, especially the right, as he could no longer hold his brush well. Progressive wasting was now noticed, first in the thenar muscles, then in the interossei, and lastly, in the muscles of the forearms. In the right hand the disease was a month or two in advance of the left from the first, i. e., in this present instance, while in previous attacks they had been affected about equally and simultaneously. At no time had there been any pain, paresthesia or anesthesia. Examination showed nothing worthy of comment outside of the wasted muscles. Sensation was perfect, and the reflexes were not materially altered, except, of course, in the atrophied muscles, which were flaccid. The hands were practically useless and the wasting of their muscles extreme. The metacarpal bone of the thumb was in a plane with that of the fingers. Improvement under treatment as specified in the other cases was prompt and pronounced. It was continued for about ten weeks, the patient coming daily to the clinic. Toward the end of this time, however, he so frequently presented himself in a drunk and disorderly condition, that his further attendance was discouraged, and he was lost sight of, after having regained considerable use of the hands.

While as previously stated, this method of treatment has in my hands fallen short of the expectations I had formed of it, nevertheless it has gone a long way to dissipate the horrible sense of discouragement, depression or even despair which the prognostic contemplation of these cases hitherto aroused.

In conclusion it should be added that the value of hygienic measures and the judicious use of electricity, massage and gymnastics, always recognized as of great importance, is rather enhanced than otherwise, when used in conjunction with the strychnia treatment herein advocated.

Dr. C. J. Lewis: I would like to inquire whether the essayist has formed any conception as to why it is that the salt nitrate acts preferably to the sulphate. While I am on my feet. I want to state the difficulty we have with these cases. I have not had many of them, but I re-call one that came under my observation two or three years ago. The patient was a child jumping from a platform about six feet high, had progressive atrophy commence in the muscles below the knees, progressing for about six months. After this one limb gradually recovered. I could not account for the recovery of this any more than the failure of the other. I want to know to, whether it is on account of the nitrogen element that this salt is better than the others.

Dr. A. W. Baer: The paper just read by Dr. Brown is interesting. As regards why the nitrate works better than any other salt of

strychnia, I should say that the nitrate is a little more soluble than the sulphate, although the latter is one of the most soluble salts of strychnia.

With reference to the use of the hypodermic syringe, the physician needs to be very careful to whom he recommends it for continued use. This was well illustrated by one of Dr. Brown's cases, where the patient used a great deal more of the drug than he told him to do. I find that the case too often. Personally, I have had several cases in the last year and a half in which I have used the continuous current, and have obtained better results with it than by anything else.

As regards using electricity with strychnia, I have not had good results from the combination. I have thought one interfered with the good effects of the other.

Dr. Brown (closing the discussion): In reply to Dr. Lewis' question, as the last speaker (Dr. Baer) has just said, it is thought that the superior efficacy of the nitrate is due to the fact that it is a more volatile salt. Given subcutaneously it is not so likely to be decomposed as taken through the stomach. An important point should be remembered, namely, that we do not get in this method of treatment the so-called physiological action; we do not carry it to that extent. In these small doses, it may have a specific action. I do not base my conclusion as to the efficacy of this remedy alone on the cases I have reported for I have had other cases which were successfully treated by this method, however, I am not in a position to take such a sanguine view of this treatment as does Dr. Gowers in his article in Quain's Dictionary, to which I referred in my paper, in this he stated that he had had seven consecutive cases where the disease had been arrested by this method in a few months, and in all but two the results had been permanent. The report of Dr. Gowers, who himself is I believe quite a therapeutic skeptic, stimulated me to use this drug in the way I have described. It is true, these cases are not common, but if practitioners will employ this method more generally, we can determine whether or not these results are mere coincidences. As the disease occasionally undergoes a temporary or permanent remission.

Cystic Kidney.

Dr. F. Kreisel: Taking this specimen out of the jar, I find, to my regret, that the principal part of it which I desired to exhibit, the renal pelvis and upper part of the ureter, must have been lost en route from the operating room to the laboratory. However, a study of the accompanying X-Ray picture and the history of the case might be of some interest, inasmuch as they illustrate the fallacies of X-Ray diagnosis in certain kidney diseases. There is a dense, well-defined shadow in the region of the right kidney, which, taken together with the other symptoms in this case, pain in the right lumbar region, radiating down along the ureter, and pus in the urine, obtained through the ureteral catheter, would easily induce one to diagnose renal calculus. Making a lumbar incision, I found the kidney over twice its normal size, consisting of numerous cysts, whose wall in some places was as thin as tissue paper.

The ureter joined the very distended infundibulum much higher up than usual, and its pelvic orifice was obstructed by a valve, which permitted the downward passage of a small-sized probe only, while I had no difficulty at all in entering the renal pelvis with a ureteral catheter, 8 French, previous to the operation. It is a case of cystopyonephrosis, apparently originating from the congenital defect at the renal orifice of the ureter. The patient, 29 years old, made an uneventful recovery. The urine cleared up within twenty-four hours after the nephrectomy. The left kidney worked well immediately after the operation, which I anticipated from the satisfactory result of a functional test I made a week before.

Renal Calculus of Unusual Size.

This specimen is from the right kidney of a patient, 41 years old, sent to me by Dr. A. C. Croftan. The short history given me is this: He had renal colic on the left side in November, 1891; shortly afterwards, and since that time, was unable to void urine in any other but the recumbent posture. March, 1892, a vesical calculus, removed by Dr. McArthur, by suprapubic lithotomy. Very soon again renal colic on the left side, appearing in longer or shorter intervals, until spring of 1903. X-Ray picture, taken at this time, negative. He was put on calcium carbonate medication by Dr. Croftan, following which no renal colic experienced for over six months.

October 25, 1903, urine retention, necessitating drawing of the urine for three days. The latter was alkaline, which was attributed to the calcium carbonate. In a cystoscopic examination, October 27th, I found a vesical calculus, purely phosphatic, of the size of a hazelnut, which I removed by lithotripsy. The subjective symptoms of the cystitis yielded to local treatment within a few weeks following the operation, but the urine remained turbid and alkaline. December 22d, he returned, with dull pain in the right lumbar region, and severe tenesmus. Through the cystoscope the bladder wall looked normal, with the exception of a small congested area near the right ureter. Catheterizing both ureters simultaneously, I collected 50 c.c. of clear and acid urine from the left kidney, and 100 c.c. of cloudy, alkaline urine from the right, which first came in a continuous stream, and with great force, as I have always observed in hydronephrosis and pyelitis with pelvo-renal retention. Here follows the result of the urine examination, furnished by Dr. Croftan:

Right.	Left.
Quantity, 100 c.c.	50 c.c.
Reaction, Alkaline (!)	Acid.
Spec. Grav., 1019	1016.
Urea, 1.4 per cent	0.2 per cent
Color, Yellow (cloudy)	Yellow (clear)

Sediment, right, Pus abundant. Few red blood cells; abundant crystals of calcium oxalate; amorphous urates, and staphylococcus.

Left, No pus. No blood. No staphylococcus. Urine sterile. Ordinary sediment, with excess of oxalate and urate crystals.

I irrigated the right renal pelvis with oxycyanide of mercury solution, and injected 4 c.c. of a 1 to 1000 nitrate of silver solution before withdrawing the ureteral catheter. Urotropin internally, and the same application repeated every third day for three weeks, did not change the condition of the urine, although there was temporary relief from lumbar pain for a day or so following each ureteral catheterization. An X-Ray exposure of the right kidney on January 25, 1904, showed two small shadows, as you may observe on the photograph. February 14th, making a lumbar incision on the right side, I exposed a very large kidney, extending far up under the ribs, and the vault of the diaphragm, the pedicle shortened and stiffened by dense contracted tissue, which tucked the kidney close up against the spinal column. Much difficulty was experienced in freeing the stone from its encasement, from which it had to be cut out. After removing the larger upper part of the calculus, I was able to get at the smaller ones, which filled the infundibulum and extended in the ureter. The accompanying sketch conveys an idea of the situation of the stone in the kidney. Its total weight, including two calyx branches scooped out separately and lost, is two ounces. Though badly infected, I did not remove the kidney, because of its apparent much better functional activity than the one of its mate, as indicated by the previous result of the examination of the segregated urine. This conclusion was sustained by the fact that the bladder remained dry for forty-eight hours after the operation, while the dressings on the operated side were so much saturated that they had to be renewed every few hours.

An examination of a resected piece of the kidney by Dr. Croftan shows the parenchyma not involved, but an ascending infection of the uriniferous tubules. No miliary abscesses within the kidney substance. The glomeruli not involved. Patient made a good recovery. Here we meet again the defects in X-Ray diagnosis of kidney disease, which long before this induced me not to rely upon it, but to be guided by the clinical symptoms, occasionally supported by the result of urine segregation. The vast majority of suppurating or bleeding kidneys are at any rate surgical kidneys, at least warranting an exploratory lumbar incision or a nephrotomy.

Dr. Charles Spencer Williamson read a paper entitled **the Initial Lesion of Pulmonary Tuberculosis, and its Diagnosis.**

The question as to the initial lesion of tuberculosis has been so often made the subject of special investigation, that it would seem as if the matter must have been brought to a satisfactory conclusion long before now. Anyone who has seen many post mortems and paid close attention to the lungs must have been struck with two points. 1. The enormous frequency with which tuberculosis is found in the lungs of people regarded as perfectly healthy. 2. The extreme rarity of changes in the lung which could be properly described as incipient, that is where the changes remain localized to that tissue where they first develop. It follows, therefore, in view of the comparative rarity of the truly incipient cases of tuberculosis on the autopsy table, that a very large material would be necessary in order to secure even a small number of cases for study. The systematic examination of a large autopsy material with a rigid exclusion of all cases where the tubercular process has extended beyond the tissue first involved, furnishes the only hope of a solution of this problem.

This was undertaken by Birch Hirschfeld of Leipzig, his observations extending over many years, and based upon an enormous material. My interest in this subject dates back about six years, at which time I had the pleasure of spending a year with Birch Hirschfeld in the Pathological Institute at Leipzig.

The initial lesion is of so slight an extent, that in the dissection of the lung ordinarily made, it may readily escape observation. By far the simplest and most certain way of detecting a very small focus of tuberculosis in the lung, is by careful palpation. On many occasions I have seen Birch Hirschfeld pick up a lung which had been pronounced normal, after a tolerably careful section made in the ordinary manner, and by palpating in his characteristic careful, painstaking manner, discover a small nodule hidden away beneath the apex, which had been overlooked. I have repeatedly had opportunities to satisfy myself that careful palpation of the exposed lung, is the only method to avoid overlooking small and inconspicuous foci. In an enormous series of autopsies of the above author, with a very high percentage of tuberculosis cases, but thirty-four were found where the lesion could be truly said to be incipient. The results and conclusions of his investigations will be briefly given here. 1. As to the location: of the thirty-four cases, the right upper lobe was affected in twenty-four, and in twenty-two of these in the domain of the ramus apicalis, only two being in the lower part of the upper lobe. In twelve the lesion was at, or just under the apex; in ten, from five to seven centimetres below the apex. In both the apical and subapical cases the posterior part was most often affected. This was equally true of the left lung, in nearly all of the cases bronchus apicalis posterior being first affected. In fifteen cases the left upper lobe was involved. In eight of these the right lung contained lesions of the same apparent age. Of the fifteen cases of primary involvement of the left upper lobe, the lesion was found ten times at, or immediately below, the apex, four times in the posterior sub-apical region, and once only in the anterior part of the superior third of the lobe. So far as the side first attacked is concerned, Laennec's idea that the right lung was most often involved, finds its confirmation in these figures.

The nature of the initial lesion Birch-Hirschfeld found to be a bronchitis caseosa, a true tuberculous bronchitis of the medium and

smaller sized bronchi. In these incipient cases no changes were found whatever upon the surface of the lung, especially no adhesions. Whenever adhesions were formed the lesion in the lung had already progressed beyond the stage when it could properly be termed incipient. It is not my purpose to describe in any detail the histology of bronchitis caseosa. In general, it consists of an invasion of the mucosa by small tubercles which coalesce gradually, just as in the case of the other mucous membranes. With the coalescence of the tubercles these undergo caseation, and later the mucous surface breaks down and ulceration takes place. In the case of the smaller bronchi the lumen may be entirely filled with caseous matter to such an extent, that on cross section the bronchus may closely resemble a conglomerate interstitial tubercle. Birch Hirschfeld believes that it has very frequently happened that cross-sections of bronchi with caseous bronchitis have been so interpreted. In twenty-eight cases of his series, the initial lesion was found to be a caseous bronchitis. In only three did he find an interstitial development of tubercles as the initial lesion. The currently accepted opinion that pulmonary tuberculosis begins as a focal caseous broncho-pneumonia, is thus seen to be not in consonance with the facts. Birch Hirschfeld concludes that such an origin must be exceedingly rare. More striking still is the fact that it is not the smallest bronchi i. e. bronchioles, which are affected, but those ranging from the third to the fifth order, counting the principal bronchus of the lobe as belonging to the first order. This fact should be borne carefully in mind as it gives us the key to the precise localization of the lesion. In a very careful study of the anatomy of the bronchial tree, Birch-Hirschfeld found that in the subpleural region bronchi of this particular size are to be found only in a few places, the prevalent caliber being that just preceding the lobular end branches.

On my first acquaintance with Birch-Hirschfeld, through many personal conversations and through the demonstration of much of his material some months before the publication of his Arbeit, I became interested in the question of the influence these researches would have upon the all-important question of diagnosis. I think it is well at this point to stop and consider just how extensive the primary lesion of the lung may be and still be called incipient. Clinicians have been accustomed to consider as still incipient, cases where percussion dullness may be obtained over the affected area, with harshened or even tubular, respiration, in short the signs of consolidation. Piorry and Friedreich showed that not until the lesion was four to six centimetres in circumference, could impaired resonance be obtained. Furthermore since the very beginning of the process is in the bronchial mucosa, to be followed only much later on, by the development of peri-bronchial nodules, and since the development of interstitial infiltration, especially of such a degree as to be clinically demonstrable, is of still later date, it is evident that the stage of infiltration cannot be properly reckoned as belonging to the true incipient stage. So long as the view prevailed that the beginning of pulmonary tuberculosis is in the form of a broncho-pneumonic focus, it was perfectly proper to see in the physical signs of such a focus, i. e. physical signs of consolidation, the first clinical expression of the disease. With the demonstration of the fact that the areas of infiltration are preceded by a stage in which for a considerable period of time the bronchial wall alone is affected, this view must be given up. We may, therefore, properly define a truly incipient tuberculosis as one in which the disease is limited entirely to a bronchitis caseosa, everything beyond this being no longer truly incipient. I conceive it to be our problem to inquire as to what are the diagnostic criteria of the truly incipient case, a bronchitis tuberculosa. For the comparatively insignificant number of cases where the beginning is in the form of an interstitial development of tubercles, these remarks, of course, do not apply.

Bearing carefully in mind the pathological changes, let us reflect as to what would be of necessity the physical signs. It is evident that so long as the bronchitis tuberculosa is of moderate degree, that so long as it does not encroach too much upon the lumen, the physical signs will not differ in the least from those of an ordinary non-tuberculous localized bronchitis. We should find dry or moderately moist, rales over the affected area of a size corresponding to the size of the bronchus in which they originate. It is important to bear in mind that at this stage, these would be the only possible physical signs. Later on when the lumen becomes considerably obstructed, the breath sounds may become faint, almost inaudible, but not until a considerably later stage, not until consolidation takes place, can dullness, harshened or tubular breathing be obtained.

An important question at once arises, namely, is the detection of tubercle bacilli in the sputum possible in such a case. The question is not difficult to answer. In the early stage of a bronchitis tuberculosa, so long as the infiltration remains confined to the bronchial mucosa and sub-mucosa and no superficial ulceration occurs, no bacilli will be found in the sputum. With the progress of caseation, superficial ulceration occurs and the finding of the bacilli becomes a possibility. A little reflection will show that owing to the small amount of ulceration going on at this time, they must be exceedingly scanty and difficult of detection. We may say then that in the very beginning, owing to the nature of the process, bacilli cannot possibly be present in the sputum, and even when the ulceration does begin, they will be exceedingly few in number so long as the process is limited to a bronchitis tuberculosa.

Defining an incipient tuberculosis as I have done, it will be seen that such physical signs as dullness, or even impaired resonance, bronchial breathing, etc., cannot possibly be regarded as the expression of the real initial lesion. We must return therefore, to those signs which are diagnostic of bronchitis, and here again all physical diagnosis teaches us that the one sign which is constantly present

in any bronchitis is the dry or moist rale. Theoretically, therefore, the one physical sign which could be expected in the true incipient stage are rales, dry or moist, and of a size corresponding to the caliber of the tubes of the third to the fifth order.

On first becoming interested in the subject, some six years ago, I determined to examine every lung which came under my observation with any disease whatsoever, with the most scrupulous care, with special reference to this point.

Accepting my definition of an incipient tuberculosis, it will be at once seen that the number of cases becomes greatly diminished, as a large number do not come under observation until the real incipient stage has long since passed. In a paper of this length it is is impossible to critically analyze any considerable number of cases, so that I will content myself by giving the results in the briefest possible form.

In twenty-one cases of truly incipient tuberculosis in private practice where I have been able to follow the cases for a sufficient length of time to place the diagnosis absolutely beyond question, no physical signs whatever beyond small or medium-sized moist rales could be obtained in eighteen. In the remaining three a few sibilant rales, with only an occasional small moist rale, were the only physical signs. In several, slightly harshened breathing was noted, but of such slight intensity as to be noted as doubtful. Of these twenty-one cases in which the diagnosis of bronchitis tuberculosa was made upon the basis of a localized apical bronchitis, nineteen gave a positive reaction with tuberculin, one gave a reaction of three-fifths of one degree with two milligrams, but for external reasons, a repetition with a larger dose could not be given. This case passed out of my treatment, but a number of months later returned with tubercle bacilli in the sputum. The remaining case gave a positive reaction, but as he was at that time suffering from a very recent infection with syphilis, I prefer to draw no deduction from the result. In but two cases could tubercle bacilli be demonstrated in the sputum, and then only in small numbers although all were examined by the centrifugal method.

I purposely avoid tabulating the results as to the precise location of the rales, except to say that they were heard considerably more frequently at the apex, especially posteriorly, than in the sub-apical region, where the initial lesion is found most frequent pathologically. I believe this to be due to the very much thicker covering of the sub-apical region, especially posteriorly, as compared with the apex.

It is not my purpose to enter into the symptomatology of these cases, as this is already well-known. Suffice it to say, that in a considerable number the subjective symptoms were not sufficient to attract the patient's attention, and the condition was found in the course of an examination for other affections. It is but natural to suppose that the symptoms would be very slight, when one excludes, as I have done, all cases from the incipient group when any other of the physical signs were present than those of bronchitis caseosa.

It must not be forgotten that the diagnosis of caseous bronchitis is, in reality, one of inference only. What is in reality diagnosticated by the physical signs, is a simple apical bronchitis. The value of these signs as indicative of tuberculosis, depends entirely upon the fact that such strictly localized lesions in the apical and sub-apical region, are, at least in those cases which come to autopsy, practically invariably tubercular. On the other hand the possibility must not be lost sight of that a simple non-tubercular bronchitis may localize itself exclusively in one or both apices. If this could be conclusively proven to be the case, the physical signs above mentioned would lose much of their value. Mistakes may be guarded against in two ways. First by observation of the patient for two or three weeks. If the apices be examined at intervals of several days, and each time the evidences of a strictly localized apical bronchitis be found, the diagnosis can in the immense majority of cases, be looked upon as fairly firmly established, quite irrespective of sputum findings. Unfortunately, in my experience at least, even these scanty physical findings are apt to come and go. I have examined many cases whose subsequent history established the diagnosis beyond all cavil, where for a month or two, absolutely the only physical signs were a limited number of medium-sized or small rales, just below the apex, which would appear and disappear, only to reappear again in the most exasperating manner. It is just in such cases that even the experienced diagnostician hesitates to commit himself to a positive diagnosis of tuberculosis on the basis of a physical examination alone. Heretofore the usual proceedure has been to regard such cases as more or less suspicious, and to place them under observation. If at the end of perhaps a few weeks, a second examination shows the rales to have disappeared, the case is regarded as one of simple non-tubercular bronchitis. Against this I cannot too strongly protest. When we reflect how exceedingly slow the development of bronchitis caseosa is, and to what an extent the physical signs, i. e. rales, are dependent upon the amount of secretion present at the time in the affected area, it should not be regarded as anything unusual for them to be temporarily absent. Personally I believe the great majority of so-called doubtful cases of apical catarrh, to be cases of tuberculosis. It is not to be questioned that a large number of these, with very slight improvement in general hygiene, disappear entirely, consequently the fact that the physical signs clear up can by no means be regarded as a proof of the non-tuberculous character of the affection. Furthermore I wish to protest most emphatically against the all too prevalent custom of permitting such cases to go for a considerable length of time, without coming to a definite, clean-cut conclusion, followed by the appropriate therapy. It is not my intention here to speak of the enormous mortality of tuberculosis, nor of the equally important chronic invalidism and incapacity for work which result from it. Believing as I emphati-

cally do, in the eminent curability of the disease in its early stage, and the well-known inefficiency of all treatment in the later stages, it can hardly be deemed an exaggeration to say that the diagnosis of pulmonary tuberculosis at the earliest possible moment, in its true incipiency, is the most important practical problem confronting the physician of today. To let weeks and months slip by watching a suspicious case, is to let the golden opportunity pass by unused. Every energy should be bent towards establishing the diagnosis then and there. In this connection we have fortunately a powerful aid, but one which has been much neglected in America, in the shape of tuberculin. I find constantly opinions expressed among physicians as to the dangers attendant upon the use of tuberculin. After a pretty large experience in the use of tuberculin, I should like to briefly state my conclusions in the form of a summary, reserving the detailed analysis of cases for another occasion.

1. The use of tuberculin as a diagnostic agent should be limited strictly to such cases of suspected bronchitis tuberculosa as have been above described, where the diagnosis is really in doubt.

2. Used in the manner recommended, its use is unattended by danger and it has no deleterious effects.

3. In pulmonary tuberculosis, in the truly incipient stage, before the case has become one of mixed infection, tuberculin gives a positive reaction in at least ninety per cent of the cases. In the remainder the reaction is of a more or less doubtful character, or may, under extremely rare circumstances, be absent. In advanced cases, or even cases moderately advanced, where mixed infection is a pronounced feature, the use of tuberculin as a diagnostic agent is exceedingly unreliable, and probably never justifiable.

4. The evidence that other diseases, notably syphilis, may react positively to tuberculin is not conclusive. In the majority of these cases coincident infection in some obscure organ, with tuberculosis is highly probable. In any event the conditions which have been said to produce reactions with tuberculin, are such as would not enter seriously into a differential diagnosis.

5. The tuberculin reaction cannot be looked upon by itself as absolutely and conclusively certain, but taken in conjunction with doubtful physical signs in the lung, it establishes the diagnosis with practically absolute certainty.

Technique. The temperature should be taken every two hours for at least two full days before the injection. The initial dose for injection is, in my hands, best placed at one milligram, when the physical signs are very slight. When the physical signs are somewhat more pronounced, one-half milligram is a fair initial dose. The time of administration is best in the afternoon, as under these circumstances the reaction is most apt to follow between twelve and twenty-four hours afterwards. This permits the temperature to be taken during the daytime, the time when the reaction is most likely to occur. For at least forty-eight hours following the injection, the temperature should be taken most carefully at two hour intervals. A positive general reaction may be regarded as having been obtained when the highest temperature following the injection exceeds the highest temperature before the injection, by at least one degree Fahrenheit. A well-marked positive reaction will frequently be indicated by a rise of two and one-half or even three degrees. If no rise follows the first injection, several days should be allowed to pass and a second given of three or four milligrams. If this results negatively, the dose should be increased to seven or eight, after a similar pause, and if then negative, increased to twelve milligrams. Any case not reacting with twelve milligrams may safely be excluded as not being one of active tuberculosis. Extreme care must be taken to have an absolutely fresh active tuberculin. In my earlier experimentation I found numerous cases which failed to react to twelve milligrams of one tuberculin preparation, which promptly reacted to one milligram of a fresh, reliable preparation. Too much stress cannot be laid upon this, for I believe it to be the source of most of the unsatisfactory results which have been obtained with tuberculin. In dilute solution, i. e. one or two per cent, it rapidly deteriorates and becomes unfit for use after a few days. Personally I invariably have an absolutely fresh solution made up for each injection. Since adopting this rule, I have obtained reactions with the greatest uniformity. The strength solution used for the injections is, I think, a matter for individual taste. I have found a two per cent solution, with one-half per cent carbolic acid added, most convenient.

In addition to the general reaction indicated by the temperature rise, there is a local reaction in the lung which consists pathologically of a slight inflammatory reaction, and clinically of an increase in the number of rales and slight harshening of the breath sounds. When this is well marked, as it sometimes is, it has equal value with the general reaction. In the majority of cases it is not sufficiently pronounced to be thoroughly decisive, and possesses this very serious disadvantage, in that it permits a dangerous amount of latitude to the individual judgment. A practiced auscultator in constant training, may detect differences not apparent to one who examines less frequently but upon differences of this character little weight should, I think, be laid.

Summary.

1. The initial lesion of pulmonary tuberculosis is, in almost every case, in the mucous membrane of the smaller bronchial tubes in the form of a true bronchitis tuberculosis.

2. Cases in which peri-bronchial infiltration, interstitial infiltration, or even small foci of caseous broncho-pneumonia are present, can no longer be considered as incipient.

3. It follows from the last conclusion that the physical signs of consolidation, such as impaired resonance, dullness, harshened or even bronchial breathing, are not to be considered as diagnostic of the truly incipient stage of tuberculosis.

Discussion.

Dr. Edwin W. Ryerson: With regard to the

use of tuberculin, I would like to ask the essayist whether he has seen any bad results following its use? About seven years ago, when we first began to read a good deal about it, those of us who are interested in tubercular joints were very much in favor of its use. We learned a great deal about it. I have seen six cases in which tuberculin was used for diagnostic purposes in suspected tubercular joints, in which very serious results followed. I was in Boston at that time, and nearly every practitioner there became afraid to use it in these debatable cases.

I want to find out, if possible, what the experience of the essayist has been in that line.

Dr. Alfred C. Croftan: What subjective symptoms, what temperature curve, would be produced by so infinitesimal a lesion, and what would induce a patient so afflicted to consult a physician? Personally, I do not believe that so slight an affection of a bronchiolus can produce any physical signs whatsoever. I do not believe that it can be diagnosed, nor that it can even ever be found by chance in a living subject.

However, interesting and instructive, therefore, the clear and thorough demonstration of Dr. Williamson may be from an etiological and pathological standpoint, it is of little value from the clinical standpoint of the diagnostician. I ask Dr. Williamson whether, in his opinion, a patient afflicted in the way he describes would present any one of the signs that are so characteristic, for what I should like to call "early" tubercular involvement of the apex, in contradistinction to the "incipient" involvement he describes. I refer to such common signs as the dilatation of the pupil on the affected side from irritation of the sympathetic fibers in the apical region, the pain elicited on pressure deep down into the supraclavicular region, the well-known auscultatory and percutory signs, the tuberculin reaction, etc.

In speaking of the tuberlin reaction, I want to hear Dr. Williamson's experience with iodide of potash in place of tuberculin in such cases as he describes. I have used it occasionally. I consider it dangerous, as I do tuberculin, but I believe that in some of the early cases it is possible by giving this drug for diagnostic purposes to produce what may be called a liquefaction of the infected focus, with increased moist rales over the suspicious area.

Has the statement been absolutely demonstrated that a tuberculous lesion of such a slight character is always primarily a lesion of the bronchiolar mucosa, and is it always an air-borne thing? Is there not a great deal of evidence to show that in many of these cases the lesion involves primarily the lymphatic apparatus surrounding the alveoli, and that the invasion of the bronchioles is a secondary phenomenon; the ulceration being produced by an erosion of the mucosa from behind? Personally, I am becoming more and more convinced that many of the mild pulmonary affections that are so common are blood-borne and not air-borne. The intricate lymphatic and capillary labyrinths of the lung are directly in the path of any bacilli that may come from the large lymph channels entering the subclavian vein, and they are particularly adapted to catch and arrest such foreign bodies. It is a remarkable fact that in children in whom the perialveolar lymphatics are not developed, as in the adult, tuberculous lesions only rarely appear in the lungs, as compared with the great frequency with which they appear elsewhere in the body, notably in the meninges, the joints, the glands, etc. And children are certainly as much exposed to air-borne tuberculous infection as are adults. I do not believe that this clinical fact can be explained alone by the more or less hypothetical assumption that the intestinal mucosa in children is more vulnerable than in adults and more readily permits diapedesis of swallowed tubercle bacilli into the lymph stream.

Dr. George W. Webster: I think it goes without saying that when a clinician waits for the signs of pulmonary consumption, as evidenced by dullness on percussion, by bronchial breathing, or any of the other marked signs of pulmonary consolidation, he has waited for the whole clinical house to fall upon him. At the same time, it is perhaps drawing a very fine distinction to distinguish, as the Doctor has so carefully done, between incipient and what perhaps we might, for clinical purposes call the early stage of pulmonary tuberculosis. Following the Doctor's classification, which we are bound to call the incipient stage in these cases, I do not believe that such patients have any subjective symptoms that will bring them to our offices nor call us to see them. Furthermore, that under these circumstances the physical signs will be so slight that even for the expert they are beyond absolute demonstration.

I agree heartily with the essayist in the statement that these initial lesions in the early development of pulmonary tuberculosis take place in the anatomical region which he has described; but I do not believe, however, when it does develop in this situation, that it is usually an infection which has been carried to that point by the way of the bronchial tube through the inspired air. There are only three ways in which these bacilli may reach the tissues: (1) By way of the inspired air; (2) by way of the lymphatic paths, and (3) by way of the blood channels. By way of the lymphatic paths a comparatively small number gain entrance. I am one of those who believe that the relative importance of the air tubes or paths of infection have been greatly exaggerated, and that we have not given sufficient attention to or attached sufficient importance to infection by way of the blood channels. For instance, we may feed animals tuberculous sputum, and obtain tubercle bacilli in three hours from the thoracic duct; and under such circumstances there will be no lesion of the intestinal lacteals or anything to show where these tubercle bacilli entered the circulatory system. They go from there to the right side of the heart, pass out into the lungs from the right ventricle, and there are screened out in the lung. I believe the reason we find them localized in the right apex of the lung, and in that particular part supplied by the ramus apicalis posterior is not because the right bronchus

is larger in size or more direct, and therefore would carry more air and is more likely to carry germs to that side of the lung, but simply because in that particular locality the ventilation of that part of the lung is less perfect than elsewhere, and because of the peculiarities in the circulation in that situation. I believe a great many of these cases of pulmonary tuberculosis are cases of infection by way of the intestinal tract. I believe also, in a case of single lesion in the lung, where it is simply a subepithelial infiltration, as has been described by the essayist, the only physical signs under these circumstances are those described by him. I took that ground in a paper which I read before this Society on practically this same subject in 1900, in which I took as my text the early diagnosis of pulmonary tuberculosis rather than the diagnosis of the incipient stage. The Doctor, having confined his discussion to what he is pleased to call incipient cases, a single lesion, simply a subepithelial infiltration, and without ulcers, cuts us off from any discussion of the symptoms or signs of early pulmonary tuberculosis. But a discussion that would be of far more importance to the general practitioner would be this matter of the early diagnosis, or the diagnosis of the early lesions, if we do not confine it strictly to a single lesion, as the Doctor has under these circumstances.

Dr. Williamson (closing the discussion): In reference to the question asked by Dr. Ryerson as to unpleasant results following the use of tuberculin, I would say that in two or three cases I have seen reactions of a somewhat stormy character following small doses. In one case after the injection of three quarters of a milligram, in a case of suspected tuberculosis of the kidney an exceedingly violent reaction resulted with a rigor, followed by a temperature of over 104 degrees, lasting some twelve or fourteen hours. The symptoms were quite alarming for a few hours, but although the case was kept under observation for a considerable period no other disadvantageous results followed. There was one other case of a somewhat similar nature but with less stormy symptoms, which I have to chronicle.

In regard to Dr. Ryerson's other question as to surgical cases, I feel that I am not competent to answer the question. My practice is limited to internal medicine, and I have absolutely no experience with cases of surgical tuberculosis.

In reply to the question of Dr. Croftan, I have never been able to elicit the symptoms referred to, although all the later cases have been examined with reference to them. Theoretically, it is quite impossible to see how they could be present in such cases.

In regard to the symptoms which have led patients to consult me, very little is to be said. It is well known how very meager are the subjective symptoms in most cases, even where the disease has progressed to such a point that the signs of consolidation are quite plain. I did not wish to discuss this phase of the subject, but I should say that in at least half of the cases the condition was discovered accidentally in patients who have consulted me for other troubles. In those cases where the symptoms of the disease were sufficient to lead them to seek advice, slight digestive disturbances, slight cough, loss of weight, etc., are most commonly complained of. Personally I lay but little stress upon the subjective symptoms, except in so far that they render a searching examination of the lungs, imperative. In view of the facts already referred to as to the frequency of overlooked tubercular foci, as shown by autopsy records, it should be made a rule never to be departed from that a rigid examination of the lungs is a sine qua non in every medical case, whether presenting suspicious symptoms or not. I feel sure that nearly all our errors are made along the line of considering cases incipient when they are in reality further advanced, that is when the stage of interstitial infiltration has already been reached. This is especially true of foci in the sub-apical region, as will be evident to anyone who has a correct conception of the limitation of physical diagnosis in such cases. Every one with much experience has seen occasionally a case where the most painstaking examination, repeated several times, has revealed no definite physical signs whatever, and yet the sputum shows a few tubercle bacilli. These cases become rare just in proportion to the experience of the examiner and to the thoroughness of the individual examination.

So far as the potassium iodide test is concerned, I have used it in a considerable number of cases with more or less satisfaction, but in others it has failed utterly. Inasmuch as the test presents nothing specific, I have learned to consider it of very subordinate value.

In regard to the question of vascular and lymphatic infections, I believe that the last word has by no means been spoken. Much evidence has lately been brought forward, more especially evidence of an experimental nature, in their favor, although in the investigations of Birch-Hirschfeld, so far as the primary bronchitis tuberculosa is concerned, a lymphatic or vascular origin may be, I think, excluded with certainty. The reasons for the localization of the focus in bronchi of the third to the fifth order, was considered by Birch-Hirschfeld at some length, but its discussion would lead us too far on this occasion.

Dr. Lucy Waite read a paper entitled **the Present Status of Surgical Intervention in Retrodeviation of the Uterus.**

Discussion.

Dr. Henry T. Byford: I was very much interested in this paper, and think I can summarize the whole matter with regard to the present status of operative treatment for retroversion or retrodeviation of the uterus by saying it is all in a condition of confusion. However there are some points which should be brought out and are worth discussing in a paper of this kind, because the final word has not been said by the profession.

I heartily agree with the essayist that it is wholly unnecessary in many cases to operate for retrodeviation of the uterus alone. How-

ever, with regard to the question of whether a retroversion of the uterus will cause any trouble in itself, it is hard to consider a retroversion separate from other conditions. Ordinarily, there must be some relaxation of the broad and utero-sacral ligaments, unless the retroflexion is marked. When there are adhesions or conditions that are connected with the retroversion of the uterus, the question arises how can we be certain to relieve them without paying attention to the retroversion itself. But I suppose that phase of the subject is a little beyond the scope of the discussion, yet it is perhaps the most practical point we can consider.

In many cases we have a deviation of the uterus from the normal that is not serious and does not cause much trouble, and we have operations that are complicated, that produce abnormal conditions, require a great deal of cutting, and also expense to the patient, and they ought not to be done for the mere correction of retroversion. What we want is not more operations, that are so often invented and done for the benefit of the operator rather than for the benefit of the patient, but a simplification of the operations, so that we can apply them to simple conditions.

A large proportion of the cases that come to me have symptoms and they want to be cured. In examining such patients I may find a laceration or other troubles along with adhesions. I may tell a patient that she needs a curettage, a perineorrhaphy, or what not, and that while I am about it I will do whatever is necessary. I do not know whether it would be all right to let the retroversion alone in such cases or not, but I have seen women who were not cured of their symptoms when the retroversion was not relieved. If I have a simple method with which I can correct it, there is no great objection to doing it with the other operations. An Alexander operation involves but little more cutting and no danger.

In the other class of cases in which there are peritoneal adhesions, if I have to operate for them I do not want to let the uterus go back and form new adhesions. So I take a fold in the round ligament, sew it together and draw the parts together in a small little knot and the uterus does not go back. The woman is cured of the retrodeviation with but a trifling addition to the operative procedures and but a few moments of time.

I believe that mere uncomplicated retroversion causes as a rule no symptoms, but I find but a few uncomplicated ones.

Dr. Franklin H. Martin: I would like to ask the essayist one question and have her answer it if she will before I begin my discussion. It is this: In her investigations, did she find any reported cases of pregnancy following the intra-abdominal shortening of the round ligaments besides the one reported by Dr. Anna Braunwarth and the one reported in Brooklyn, in which rupture of the uterus occurred a few years afterward and possibly one other case?

Dr. Waite: I cannot say that I did.

Dr. Martin: (resuming.) This subject is chaotic. It is chaotic because it is discussed from two standpoints, one from the standpoint of those who operate and who have had their training with American women and the other from the standpoint of those who do not operate and whose training or experience has been mostly with the peasant women of Europe. If there is anything that is true in the world, it is an abnormal development of the sympathetic nervous system in the women of America and possibly those of France, and I wish to take off my hat to my old friend Byron Robinson, for pounding away on this subject until it is simply impossible for us to forget that women have two brains, one here (pointing to the head) and one in the abdomen.

What I have to say is based on the two sides of this subject. I have dealt with the peasant women of Europe, and I have dealt also with the neurotic women of America; therefore I think I am familiar with the two types of women. My experience is not based on operating alone, but on an enormous number of cases treated in the office by what I consider sensible and rational means, namely, postural treatment, hot water douches, stimulation of muscular tone of the parts by some form of interrupted electricity, and attention to the general hygiene of the patient and her mode of living. The cases I have treated by these means will number many hundreds. Those cases I have not tabulated. My other cases are those in which I have found it necessary to operate. Over one hundred cases were operated upon by the old Kelly fixation method before 1896. I reported to the Chicago Gynecological Society two months ago three hundred and twenty-eight cases operated on by my autoplastic method of suspension since 1896, 98 per cent of which were successful, and the ability of the operation to successfully stand pregnancy is illustrated by the report of six normal pregnancies in this series. I have operated on over 50 cases by the Alexander operation by fixing the ligaments to the pillars of the inguinal canal, as formerly performed prior to 1896. I have tabulated 79 cases operated on by the Alexander operation by the autoplastic method of tying the ligaments together. So my experience is extensive and broad. Twelve normal and uncomplicated pregnancies and labors followed these Alexander operations, and the symptomatic cures in these seventy-nine cases were complete.

Now, in regard to symptoms, it is simply inconceivable to me how anybody coming from the home of Robinson can say that a retroverted uterus, impacted and remaining in that position for any great length of time, right at the very center of one of the provinces of the abdominal brain, cannot or does not produce symptoms and not only symptoms but damnable symptoms because it certainly does.

I am not going into primary principles, but I would like to make one little picture (drawing on the blackboard, representing the normal and the retroverted position of the uterus). The remarks just made by Dr. Byford struck the keynote, when he said that there are few uncomplicated retroversions. There are so few that they can scarcely be considered. Retrover-

sion is a complication at the beginning, and this being so, there is no such thing as an uncomplicated retroversion. As soon as a retroversion of the uterus occurs of any degree, the fundus of the organ passes backwards, and as soon as it does that, the uterus becomes parallel with the vagina. As soon as it does that, it is impossible for retroversion to occur without immediately telescoping the vagina, and lowering itself in the pelvis. It immediately becomes therefore, a complicated retroversion, and just so soon as the cervix, which is supplied not only with sympathetic nerves but with cerebro-spinal sensory nerves, presses low in the vagina, presses upon the cerebro-spinal nerves near its outlet, at that point (indicating) we get what the woman calls a bearing down, which represents one of the most aggravating symptoms of retroversion and its complications. This bearing down pain is usually one of the first symptoms complained of. The next symptom is that produced by the pressure of the fundus of the uterus upon the back of the pelvis. While the pressure of the fundus upon the back of the pelvis does not always produce severe pain, as a rule it does. Thus we have the local symptoms of backache, bearing down pain, dysuria from bladder symptoms and constipation from bowel pressure. The result of the irritation of the displaced uterus upon the abdominal brain gives us the distressing relay of symptoms often quoted by Byron Robinson.

In regard to the treatment, some of these cases must be treated by other measures than by postural treatment, electricity, hot water, etc. The cases which must be treated that way are those in which the uterus is perfectly movable, but still persists in remaining in abnormal position. If this local treatment fails they must be treated by the Alexander operation preferably. At the same time, repair the perineum which probably exaggerates the retroversion and repair the cervix which keeps the uterus large. If the woman has been infected and she has retroversion, and her pelvis is full of septic material and adhesions exist in consequence, then the only thing to do is to open the abdomen, clean out the septic material, save just as much of the live tissue as can be saved and then, if the uterus is not covered on its fundus with plastic exudate—is not raw, as you would say—it should be suspended by either the superficial operation of Kelly, which has been developed since 1896, after the statistics of Dorland quoted tonight by the essayist, were published—or better, the operation which I think is preferable, namely, my own operation of suspending the uterus on a strip of peritoneum. These two operations are the operations of choice; they are simple, and they accomplish excellent results. They cure the patients.

Time does not permit me to pay my compliments to the operation of intra-abdominal shortening of the round ligaments. For the last three months I have gathered together every case of pregnancy that is reported in literature following operation for retrodeviation of the uterus, and I have found less than ten cases of pregnancy reported following these operations. Where are the reports from the men—Webster, Wylie, Baldy and the rest—who have been fathering these operations for several years? Where are the reported cases?

The essayist of the evening favors these operations. Why? Certainly not because there is anything favorable in literature showing their results. Why did she quote Dorland's obsolete reports of pregnancies following fixations to prove the dangers of the modern operation of suspension of the uterus?

To summarize then, the present status of operations for retrodeviations of the uterus I will submit the following: Retroversions of the uterus are nearly all complicated and produce symptoms. Retrodeviations should be treated (a) by local treatments when not seemingly complicated, (b) by Alexander Operations when persistent and free from adhesions, and (c) by a superficial suspension when complicated by conditions requiring the opening of the peritoneum.

Dr. Emil Ries was asked to participate in the discussion. He said: I came to the meeting to-night to listen, not to talk, but I think I should be ungrateful did I not express my feelings toward the essayist. She certainly gave a very complete review of the subject, and has grasped the trend of modern thought. She fights in the forefront, and as we know what a woman's influence is on other women, especially in medical life, I hope and pray that her influence may grow and increase as it has done in the past.

Some of the remarks made by Dr. Martin are of interest to me, because I have been experimenting with these cases in a special way. It has been said to-night that retrodeviation of the uterus in the sensitive American woman must of necessity produce symptoms distinct and apart from those which may be produced in European peasant women. The gentleman who made that statement probably overlooked the fact that there are women in Europe who are not peasants; that women in Europe have retroversion who are above the peasant class, and that there are authors who have experience with these cases, men who have practiced outside of the peasantry. However, it is not necessary to confine one's practice to any particular class, because it is simply a matter of experiment. I am rather astonished to notice that the experiment has not been made more frequently. Whenever I have a chance at my clinic I demonstrate to the students the effect of a change of position of the uterus as it is produced by a pessary, as it is produced by simply a replacement of the uterus, and point out how the change of position may influence the symptoms. I need not give the details. We have had six cases in which we have experimented something like this: A woman is examined, and retroversion of the uterus is found. A pessary is placed in the vagina; the uterus left in retroversion; the woman told nothing about what is done, but instructed to come back in three days. She comes back with symptoms the same as they were before. Then the uterus is placed in

anteversion; no pessary put in; the woman told to go home and return at the end of three days. She comes back and we find the uterus in retroversion again. It must have fallen back sometime. The uterus is replaced, a pessary introduced into the vagina, which holds the uterus in position; she goes home, returns in three days and still no change in the symptoms. Now, in the six cases with which we have experimented in this way, there was absolutely no change, and what is more, the women did not know whether their uteri were in anteversion or retroversion; whether a pessary was placed in for appearance sake or to hold the uterus in position. These women did not know when the uterus had fallen back, and their symptoms were entirely uninfluenced by the position of the uterus. I have taken pains to have the findings verified by men independently of my own work, who did not know what I had intended to do. One of these friends was Dr. Beverly Campbell, now of St. Joseph, but formerly of Chicago, who examined one of the cases for me. I have had students examine cases without telling them what I had done, and they verified the findings. Even women who know about retroversion do not know whether their uterus is in anteversion or retroversion. Of all the cases of retroversion I have seen in my professional life (and I have been practicing gynecology for something like sixteen or seventeen years), I recall only one woman who could tell me when her uterus became retroverted, and on examining whom I found that she was right, but this case had adhesions. It was not an uncomplicated case. I have never seen an uncomplicated case where the woman knew whether her uterus was in anteversion or retroversion.

So far as pressure symptoms are concerned, I do not think even Dr. Byron Robinson would place a woman's brain so low as over the sacrum. The abdominal brain is in the abdomen, not over the sacrum, where Dr. Martin expects the fundus to be pressing.

So far as the operations are concerned for retroversion, I never operate for retroversion of the uterus *per se*. An uncomplicated retroversion without adhesions is not an indication for operation or treatment. Retroversion of the uterus at present is sharing the fate of the cystic ovary, the lacerated cervix, the slightly lacerated perineum, also the floating kidney, varicocele, and similar conditions which are a fruitful field for the improvement of the finances of the surgeon, and much less fruitful for the benefit of the patient.

Dr. Waite (closing the discussion): I wish to thank the gentlemen for discussing my paper. I fear that, in order to answer all of the remarks made by Dr. Martin, it would be necessary to re-read my paper, and I do not feel at liberty to take the time. I would however like to remind him that Dr. Byron Robinson's investigations have revealed the fact that men also have two brains.

Dr. Martin says that his operation is simple, but he also says that it requires opening the abdomen. I do not think that we can consider any operation which requires opening of the abdomen a simple operation.

Dr. Walter M. Fitch read a paper entitled

The Nerve Hygiene of School Children.

There is no problem before the medical profession today more important and more urgently demanding solution than the problem of nervous exhaustion in its various phases. Not only is simple neurasthenia increasing rapidly, but insanity in its various forms is becoming alarmingly prevalent.

This condition is, I think, rightly attributed to the exhaustive character of our modern industrial life; and this includes not only industrial life itself, but also the necessary educational preparation for it. In this brief paper, I discuss certain phases of the educational problem as related to the healthy development of the nervous system.

The problem of child education today is very different from the problem of yesterday. The tasks demanded of the growing child now are infinitely more complex and more difficult than were those offered to the child of fifty years ago. His education is as different as the environment in which he grows.

This is rightly and inevitably so. We live industrially in the age of the young man. The man who does not win success while young will never win it. This is realized alike by thoughtful parents and educators. It is not from choice that teachers force their pupils; it is from dire necessity.

It is manifest that both the industrial conditions of today and the educational preparation of the child to meet these conditions impose upon the organism, and especially upon its nervous elements, a tremendous and exhausting strain. Whether or no the organism can sustain this strain is not yet determined. The results of nerve strain may not be shown for many years, perhaps they may only become manifest in the next generation; but it is for the thoughtful students of today to anticipate these possible consequences, and, by a careful study of the problem today by physician teacher and neurologist, to protect the future.

Briefly stated the problem is this: given a child of normal average bodily and nervous organization; subject that child through the age of development and tissue growth to a continuous nerve strain; bring that child through at the end of this period in a condition of normal vigor and robustness, both of nerve and body. It can be answered intelligently only by combined efforts of parent, teacher, family physician, and neurologist. I personally approach the problem both as physician and parent.

Physiologists tell us that the nerve elements, the neurones, are all formed in their simplest form by the end of the third month of intrauterine life; that there is subsequently, no new formation of nerve elements, but that the various neurones grow in size and their processes

form new connections, both with the tissues and with other neurones; and that the period of rapid neurone growth lasts only until about the eighth year, at which time the central nervous system has attained nearly the size of the adult life.

As the nervous tissues are stimulated the neurones grow, provided the necessary conditions both of stimulation and of nutrition are complied with. These conditions are, first, that the stimulation be of normal character, and that it shall not be carried to the point of exhaustion. By normal stimulation is meant the stimulation of nervous action both direct and reflex, and of conscious effort physical and intellectual. By abnormal stimulation, on the contrary, is meant chiefly the stimulation of drugs or of diseased conditions. Tea, coffee, alcohol, and tobacco, all stimulate the nervous tissues, but such stimulation is abnormal and does not induce development of the neurones, but the contrary. So also excessive stimulation or irritation of the nerve elements produces exhaustion and diminished development of the nerves, rather than an increased growth.

The other condition of neurone growth is that the neurone, in every portion, is bathed in pure and healthy blood—in blood rich in nutriment and oxygen and normally free from excrementitious substances.

The neurone alternately is in a condition of activity or rest. During activity, the stored up nutriment of the neurone—the potent chemical substances for which our colleague, Dr. Sanger Brown, has suggested the name "neurenergen,"—during activity this substance is being consumed by the activity of the neurone. The ash, the waste remnant of this consumed neurenergen, is being eliminated from the nerve and carried away by the blood stream. Also, probably, the neurone is taking from the blood stream certain nutritious substances and transforming them into neurenergen. But during activity of the neurone, the neurenergen is not formed so fast as it is consumed, and the waste materials are formed faster than they are removed from the neurone, which, in consequence, becomes loaded with this excrementitious substance. During the period of rest, however, the waste material is rapidly removed from the neurone, which is also storing up a full supply of nutriment.

The essential condition of growth is the proper alternation of periods of activity and of rest. A neurone will not grow if it is not stimulated to activity. Rest alone produces stagnation not development; but excessive activity or deficient rest will produce a wasting of the neurone even to the point of structural atrophy.

If, however, the periods of rest and activity are properly balanced, the neurone grows; and, as it grows, it increases its power of work and also its power of endurance. It is assumed, of course, in these remarks, up to this point, that the blood is normal.

Normally, the growth of neurones is most active and vigorous in early life, becoming gradually less and less active after birth, and ending largely at the age of about eight years; at which time the brain has attained to nearly the bulk of adult life; but neurone growth continues with very much diminishing activity until about 30 years of age, after which it may be looked upon as abnormal. It is believed that the acquisition of new powers or faculties of the mind imply the growth of special neurone elements in the brain and nerves. If this be true, it would account for the difficulty of teaching late learners. A child, even of utterly illiterate parents, learns the alphabet and easy reading without difficulty, while the adult illiterate finds the mastery of the alphabet an almost impossible task. The child who has learned young; in whose nervous system the facultative neurones have been stimulated to development by use, during the time when growth is most easily induced; such a child should have through his life a mind and a brain better equipped for intellectual work, than a child whose intellectual development has begun after the period of rapid neurone growth has ended.

But what has been said applies only to absolutely normal growth, to growth induced by normal stimulation which shall never be carried to the point of exhaustion, which is followed by rest absolutely normal and where the neurones are bathed in healthy blood. Better, is intellectual stagnation in early years than nerve exhaustion.

By nerve exhaustion is meant such excessive stimulation of the nerve elements, that the periods of rest are insufficient for complete recuperation. It may be produced by either too prolonged nerve stimulation, as for instance in school hours of too great length, or of individual lessons of too great length; or it may be from the intellectual tasks being in themselves too difficult. The latter is not usually the condition in my opinion.

Our principals and primary teachers are thoroughly intelligent as a rule, and they very seldom, in my judgment, try to force tasks upon a child which are beyond that child's capacity. It may perhaps be done at times, but I can honestly say that I have personally never yet met with a case. Teachers do not promote pupils from one class or grade to a higher one, in which the requirements are more difficult, until the pupil has attained such mastery of the work in hand, that the advanced work is easily within his capacity.

The other condition, viz.: too great length of individual lessons and of school hours as a whole, still does prevail to some extent, to a much greater extent indeed than it should. This is partly the fault of the teachers, but is chiefly the fault of unenlightened public opinion, and consequent opposition more or less active to the necessary pedagogic reforms which must be instituted in order to overcome this really important condition. In a city school, the child must be kept in bounds and active during a prescribed number of hours. But in a two or three hour session, the task of conducting a large number of young pupils of differing grades of development through a series

of short lessons of ten or fifteen minutes; the series being so arranged that each task required is different from, and a rest from the one which precedes and follows it; such a task is not merely difficult but impossible in the schools of the size and equipment which we now possess.

Nevertheless the teachers of our primary grades are, I think fully alive to this as an ideal condition and, in working toward these reforms, ask only to be supported by an enlightened public opinion, such as may readily be developed by the medical profession.

The reforms needed are:

1st. Smaller classes in primary grades.

2nd. More time and better equipment for physical culture.

3rd. More time and better equipment for simple manual training work.

One other cause of nerve exhaustion in childhood requires separate and special mention. This is the extra out of school work put upon the child by unwise parents. I refer especially to music study. This problem is a serious one The study of music is sufficiently like ordinary school work so that it is not in any sense a rest by change of occupation. At the same time it is so unlike school work that, for the full development of the musical faculties, early training is necessary. If this be given, the nerve elements necessary to musical technical power will be so started in their development that musical proficiency will be readily acquired in later life.

Unfortunately for the child, the task of music—study is too often imposed upon a nervous system already taxed to the limit of safety by its prescribed school routine. This of course should be avoided, not in my judgment by stopping the music during this early period, but rather by going slow, both with the music and the school studies. After the musical faculties have been once awakened by this period of early training, the music should be kept always subordinate to the school work, unless parents prefer to have the pupils held back in their studies, as for instance where music is to be followed as a vocation. In few cases is the child able to do full work as a music student and a school pupil without overtaxing the growing nervous system to the danger point.

Closely related to nerve exhaustion from excessive normal stimulation is exhaustion from irritation. By this is meant a continuous impression upon the afferent nerve arising from some abnormal bodily condition, transmitted by this nerve to the central neurones, and diffusing among them an impression of instability more or less marked. This afferent impression is not harmful because of its intensity but because of its persistency. The fact of the diffusion of slight afferent impressions is sufficient often to prevent the complete inactivity of the neurones necessary to perfect rest. The child is "nervous," we say. We mean by nervousness that the central neurones are in a condition of chronic irritation, or abnormal stimulation. This may arise from the presence in the blood of substances toxic in their nature, and such conditions will be again referred to. At this point, however, I wish to speak only of the condition of nervous instability due to irritation of peripheral nerves, and of these we must here consider three classes, viz.: eye-strain, phymosis, and the ovarian irritation of puberty.

In no condition of health derangement is the practice of the average physician open to more just and severe criticism than in the management of a case of nervous irritation. The irritation from phymosis is generally appreciated and treated properly, either by retraction or by circumcision. The contrary is true of eye-strain. Very few physicians in general practice keep this condition in mind; still fewer make the exceedingly simple tests necessary for the diagnosis of the condition. Of course the proper correction of refractive errors is distinctively specialists work, and should not be undertaken by the general practitioner. But no man should undertake general practice without knowing the simple tests for refractive error, and having ready at hand the very simple apparatus necessary to make these tests.

In practice we find that, of the various ocular errors producing nervous disorder, myopia or short-sightedness is least important. A child may be very short-sighted and have no nervous symptoms whatever; moreover the patient is usually aware of the condition, and it is the one most easily detected by superficial test and most likely to be corrected. The contrary is the case usually with either of the other three common conditions.

Hypermetropia, astygmatism or muscular error as a rule produce nervous irritation without any ocular symptoms of which the patient is conscious, and the conditions are revealed only by intelligent examination. This can be made in from three to five minutes, with but a small margin of error.

The nerve irritation of puberty in girls is usually rather slight; it is however exceedingly common—indeed it is the rule rather than the exception. If we have it occur in a girl whose nervous system is in a condition of instability from irritation by any other cause, it may become a matter of very grave importance, and if neglected may lead to a condition of severe and prolonged invalidism.

At the same time I wish to state that in my own experience as general practitioner, and in my father's experience also covering more than half a century of active general practice, we are ready to assert that treatment of these cases of pelvic irritation in girls at puberty very seldom requires any treatment directed especially to the pelvic condition; that especially if the treatment is local these cases are usually made worse rather than better; and that, if other causes of nerve irritation are removed, the patient is relieved and cured, passing the critical period without difficulty.

There is, however, one special hygienic precaution which should be taken with a certain

per centage of girls at this period of life, viz.: the general nerve strain should be relaxed. The nerve work should be cut down, during this period of physiological irritation, far below the average normal of work of the nerves either before or after this period. This I know is often difficult to do. Girls of this age are apt to be both excessively proud and sensitive. The thought of dropping back a year and allowing her companions to advance beyond her, seems to the bright and sensitive girl a dilemma little short of tragic. Nevertheless it may be necessary, and should be always insisted upon where it is clearly best. But the physician who would keep a girl back without good cause is guilty of very grave malpractice. Yet girls are constantly taken from school on this account, who would be perfectly able to go on with their work if the eye strain were removed, or if the respiration were developed up to the normal. The gravity of this error may be realized when we think how many girls, after dropping back a year, refuse to re-enter the schools and so end their pupilage prematurely.

One thing should be insisted upon rigidly by the family physician at this period. This is that there shall be no assumption of social duties and no dissipations. Parties, dances, and evening theatres must be forbidden; early hours insisted upon, and music study should usually be discontinued for the time, permitting only a few minutes practice daily. With such a regimen most girls will pass this period of storm and stress in perfect safety.

We pass now to the consideration of the other class of causes for nerve derangement, viz.: abnormal blood conditions. In this connection, however, I propose to exclude the anaemias as being a subject too broad for inclusion in this paper.

We have already stated that the second condition of neurone growth (stimulation being the first condition) is nutrition. That is that the neurone be bathed in every part in pure and healthy blood, in blood rich in oxygen and nutriment and normally free from excrementitious matter.

A neurone which does not receive its normal supply of pure, healthy blood cannot functionate or grow to the best advantage. Its growth will be retarded; its reaction either irritable and feeble, or sluggish and imperfect. A child whose nerves are in this condition may manifest the trouble by general irritability and nervousness, or by a heavy sluggishness. In either case the rule is that the nerves fatigue easily.

The chief blood derangement is sub-oxidation. This is due to one or both of two causes, viz.: obstruction of the air passages and weakness of the respiratory muscles. We usually find both present, and where present we have the most profound interference with the work of the nervous system. Feeble respiration means sub-normal oxygenation of the blood. This means that the neurones are deprived of their normal chemical stimulant (oxygen), and also are depressed by the presence in the blood of the toxic chemical products of sub-oxidation.

This interferes most profoundly with the ability of the child to meet the requirements of his school. While a child with eye-strain is typically nervous and irritable, a child with sub-oxidation is typically stupid. His mind is in a dazed condition. Simple problems in mathematics, are beyond his comprehension; while, as for memorizing, as we say, "things go in at one ear and out of the other." Such pupils are the bane of the teacher's existence; and when, as often happens, we have a combination of the nerve irritation of eye strain with its lack of power for clear visualization, together with what we might call the chemical incapacity of the brain from sub-oxidation, we have a pedagogic problem which may well be called impossible.

Now this is the fault of the general practitioner of medicine, the family physician. Nothing is easier in most cases than the removal of the obstructions to respiration in the nose and throat. The general practitioner should do this himself. When a case presents any difficulties, there is even then no excuse for neglecting it in the presence of all the facilities of our city in specialists and clinics. But this must be followed by some intelligent gymnastic treatment which will strengthen the muscles of habitual respiration. It cannot be stated too emphatically that, in nearly all cases, stupidity in a child is due to, and is a symptom of physical disease, which is curable and should be cured.

Case Jan. 18th. Girl of 16 years. Well developed and womanly. Height, 5 ft. 4 in. Weight, 98 lbs. Puberty, 2 years ago; menses normal. In 6th grade, i. e. two years behind her age, impossible to learn, seems dazed, and can hardly remember lessons from one day to another. Is faithful and tries to learn but cannot. Examination shows eyes normal. Adenoid obstruction in naso-pharynx. Respiratory movement in normal respiration, axillary circumference ⅛ inch, nipple circumference ⅛ inch, ensiform circumference ¼ inch.

Treatment: removal of the adenoids, followed by prescribed gymnastic treatment given in our office by our own nurses.

March 10.—Completed course of 25 treatments, measures respectively of normal respiratory movements, 1 inch, ⅞ inch, ¾ inch.

July 13.—Has had no further treatment, measurements respectively increased by normal development to 1¼ inches, 1 inch, 1¼ inches. Has become one of the brightest pupils of her class, learning all her lessons without the least difficulty.

This case is perfectly typical of what can be done and should be done by the family physician to supplement the work of the teacher.

The importance of this subject is not confined to the school child. Conditions of hygiene and nutrition of the growing neurones determine the state of nerve development, the normality or abnormality of the nervous system

throughtout life. We are today brought face to face with a problem, medical and sociological of the most stupendous importance. Compelled on the one hand by economic conditions which we cannot alter to force the education of the growing child to the danger point, we are confronted on the other hand by the fact of the enormous increase of neurasthenia and of insanity, so common that we can scarcely build asylums fast enough. It then becomes the duty of the physician to study this subject faithfully, and to co-operate intelligently with both teacher and parent in guarding the nervous system of the growing child.

Discussion.

Dr. L. Harrison Mettler: The essayist has taken up a line of thought which leads us into medicine, physiology, philosophy and pedagogy. It is impossible to consider all of the suggestions brought out in regard to nervous children and the causes of nervousness in the developing child. But he has referred to one thing that I wish to emphasize in regard to nervous exhaustion and its causation. In the child, I am sure that neurasthenia or nervous exhaustion is not so often an acquired condition as it is supposed to be. More frequently it is a prenatal defect. The neurasthenic symptoms are not the result, as is too often thought, of strain and pushing and over work as they are the expression of an undeveloped child. In other words, these children fall under the head of what is spoken of sometimes in the textbooks as congenital neurasthenia. There is strictly speaking, no such thing as congenital neurasthenia. It is a pure defect, and belongs to those developmental defects, prenatal, or from any other cause, hereditary, neuropathic, with a lot of other forms of natural incapacity. The difficulty in handling these so called congenital neurasthenics, both in children and in adults, is that we are trying to mould and build up something which nature has not given us to build up with. They are hereditary defectives. Some of the cases the essayist has referred to in my own judgment are expressions in the schoolroom of children that are not capable, through their inheritance, or from natural strength, of coming up to the standard of what we consider normal children; and it is no use to apply to pedagogy or to medicine to improve the condition. What should be done is this: We should change the school system. We pride ourselves in America upon the universal equality of our school system. If we stop to think for a moment, there is no more unequal system in anything or in any walk of life than our much privileged and boasted equal school system. We have a severe, uniform grind placed over a whole lot of dissimilar children. What, therefore, could be more unequal? A child born of weak parents, with a naturally unstable system, with a bad heredity behind it, is put into the same room with forty or fifty other children, and is given the same tasks and same hours as the children born of healthy parentage, strong and vigorous. One child breaks down in a short time, while another child goes on with its studies without any impairment of health. A number of these children are congenital neurasthenics, so called; they are mentally weak, even imbecile. They may reveal signs of dementia precox, or even develop later on insanity or epilepsy; they are phrenasthenics; they are along the line of the weak mentally and intellectually. This leaves us then one class to discuss, the normal child. The healthy, normal child as a child may become neurasthenic. In other words, neurasthenia in the child and adult is something that has been brought about; the normal level has dropped down. Can we shift it back again? If we can get these cases out of the condition of neurasthenia, there ought not to be so much dissatisfaction in regard to the use of the term and what it stands for.

Nervous strain and infectious diseases have a good deal to do with this condition. I do not think the reflexes play such an important role. I know that phimosis and eye-strain play a part in those with congenital defects and weaknesses. The great cause of neurasthenia, both in the developing child and the adult, but especially in the child, is not so much overwork as too early beginning of work and monotony. I am convinced, from my own observations, that these are the two prime factors. The real education of the child should be left largely until it is eight or nine or ten years of age. The child will make up for this delay. Let the neurons get their full growth. We would not think of running a machine before all the screws and wheels were fixed, and the connecting links in position. But that is what we do with the nervous systems of our children when we put them to work at regular tasks at early ages. We should not let their tasks become too monotonous. The constant drop of water wears the stone away. In their early years, while the fundamental parts of their nervous systems are still growing, our children should not be kept too constantly to one set of tasks, mental or physical. Variety and play should be the chief thing aimed at in the education of the child; instruction and knowledge should be instilled under the guise of entertainment; and frequent changes of mental and physical activity should be the rule. In this way the rapid changes incident to anatomico-physiological development are met by proper pedagogy and the greatest of all the causes of nervous breakdown, namely, monotony, is avoided.

Dr. C. J. Lewis: I heartily commend the essayist for his excellent statement of a subject that is not usually discussed. Still, there is another interpretation of nerve strain in the young besides those given by the essayist.

That the child age is an impulsive one is too commonly overlooked. Impulsiveness in the child is probably due to the undeveloped state of its cerebral cells. In school, an attempt is made to get the child's brain to function as calmly as it does in adults. In the child, the sense impressions that pass into the brain pass out almost immediately into action. It is because the children have not attained the stability which is so essential for memory—conservatism—that parents, teachers or guardians urge the young to become stayed and sedate. Nerve strain then is the effort made by the

child to change from a life of impulse to a life of continuous thinking.

If I understood the Doctor aright, he spoke of the "faculties" of the mind. Perhaps it is not an easy thing for one to arrive at the conclusion that the mind which is produced by the brain can have faculties. Our intelligence might be looked upon as a product of brain action upon sense stimuli. To denominate such actions as faculties would perhaps be outside the pale of physiology.

Dr. Fitch (closing the discussion): I purposely had in mind in writing this paper not only the conditions of strain, but of nerve nutrition developed by our educational system upon the brain of the normal child. I did not have in mind hereditary neurasthenia. I purposely left that phase of the subject out of consideration.

In reply to the remarks of Dr. Lewis, I was not aware that I used the expression "faculties of the mind." I thought I used the term facultative neurones, or the neurones employed in mental action.

The subject, as I have considered it, had to do with the nutrition, or the nutrition and use of the brain cells or neurones.

CHICAGO SURGICAL SOCIETY

March meeting, 1904, with Dr. M. L. Harris, in the Chair.

Osteomalacia.

Dr. Thomas A. Davis read a paper on this subject, and reported a case. The author believes that this was the first case that has been demonstrated in North America in a male, with apparent arrest of the disease, reported one and one-half years after operation. The patient was a Norwegian, aged 33. The family history, previous history, present illness, exploration of fracture, pathological fracture, diagnosis, differential diagnosis, etc., were gone into extensively by the essayist, also the treatment, subsequent history and skiagrams of the case were exhibited.

Retrospectively, taking the symptomatology as completely evolved in this case, the author said the simplicity of diagnosis was quite apparent. With but a slight knowledge of the disease, the inference could scarcely be incorrect. But taken at such a time as that previous to operation, the diagnosis was not so easy. These were the objective symptoms: Shortening of stature, curvature of the spine, barrel-shaped chest, none of which had been noticed by the patient. The subjective symptoms were rheumatoid pains in the extremities and spine, with possible mental manifestations of stupidity, and a mild degree of melancholia and myasthenia. As to the objective symptoms, one commonly meets with them among laboring people, without attempting to determine the cause as to rickets or occupation, etc. There was nothing characteristic about the pains complained of, and it is yet questionable as to the mental disturbance. It is quite clear that there is no individual pathognomonic symptom of osteomalacia, and still authors have expressed astonishment at the late date of recognition, or complete failure to diagnose the disease. At the present time, with no knowledge of the cause of the disease, its real nature cannot be recognized until advanced bone changes have taken place.

In reviewing the history of a large number of cases, the author finds that the symptoms almost universally mentioned are rheumatoid pains in the extremities and spine, without swelling, accompanied by myasthenia, these symptoms preceding for some months deformity and fracture. With the history of such symptoms, the X-Ray should show the lessened density of the bones, and serve to establish a diagnosis.

Dr. D. J. Davis presented an extensive pathological report of the case. He gave a brief resume of the theories advanced to explain osteomalacia, none of which he said is satisfactory. It is quite likely that softening of bones is produced in a variety of ways, and that different forms probably require entirely different explanations.

Extirpation of Suppurating Kidney.

Dr. Frederic A Besley read a paper on this subject, and presented a case. Ether was the anesthetic used, and the organ was removed through a lumbar incision. The patient made a perfect recovery. He said a retrospective view of the case presented one important question, namely: Was the removal of the kidney the wisest procedure, or would it have been better surgery to have made an effort to restore the patency of the ureter and preserve the organ? In this particular case he did not think he was justified in jeopardizing the patient's life by exposing him to a prolonged operation and a prolonged convalescence.

Dr. Bayard Holmes reported a case of buried, vertical, erect, retrocecal appendix. During the past summer he operated upon a patient, twenty-six years of age, in whom he found one of the rarer traces of the excursions of the cecum, and one of the more difficult positions from which the appendix must be removed. The patient had suffered two attacks of inflammation of the bowels, one of which kept him in bed for two weeks. He had been at work for a couple of months, and as a part of his preparation for surgical drawing, the patient attended all of the speaker's operations at the hospital. One night an emergency operation for a periappendicular peritonitis was performed in his presence. He was very much impressed by the history of the case, and the dangerous condition in which the abdomen was found. On the following day he insisted upon the removal of his own appendix. The ordinary examinations were made, and everything found perfectly normal except moderate leucocytosis. After the routine preparation, the patient was anesthetized with chloroform, and the cecum approached by a vertical incision on the outer border of the right rectus, an inch and a half long. There was no evidence of the old inflammation about the cecum; the cecum itself was short, reaching only a trifle below the ileo-cecal

valve; the meso-colon was indistinguishable, if not absent. The meso-colon of the ascending colon was broad; that is to say, the colon from the cecum cephalad was sessile. The ileo-cecal spaces were empty and contained no appendix, but immediately behind the cecum, and ascending cephalad behind the ascending colon, and wholly covered by the two layers of the meso-colon, was a firm, hard, finger-shaped mass reaching cephalad to the kidney. This was carefully dissected out and proved to be the appendix. It was thick, inflamed, and wholly destitute of a peritoneal covering except at its juncture with the upturned cecum. The cavity from which it was removed was packed with iodoform gauze, which hung out of a small incision. This gauze was removed on the third day, and the patient left the hospital one week after the operation. In his opinion this was a case in which the belated appendix had been caught behind in the retrocolic space, and buried by the adhesions which occurred in early fetal life between the kidney, the abdominal wall, the colon, and the upturned appendix and cecum.

Dr. Holmes also reported a case of partial appendicitis, and discussed at length the ambulatory treatment after appendectomy. He stated that his patients are as thoroughly prepared and as carefully examined for complicating conditions as the exigencies of the case permit. Most patients stay in the hospital twenty-four or forty-eight hours after the diagnosis has been made, and operation determined upon, but acute cases are operated upon at once. The patient is given full diet up to the noon preceding the operation. A vigorous cathartic is given the night before the operation, and the patient is put upon a liquid diet. The abdominal wall is shaved and a soap dressing applied, which remains on all night. On the morning of the operation, and at least four hours preceding it, the colon is thoroughly flushed out; the patient takes no food or drink during this time, and is kept in bed, and no disturbance from visiting friends is allowed. The day following the operation the patient sits up and even walks around, and after this time has the freedom of the hospital until the stitches are removed on the third or fourth day. The patient usually dresses and walks outside the hospital on the fourth day, and occasionally goes home before the end of a week. Very few cases of uncomplicated appendectomy have remained longer than one week after the operation.

He gave brief histories to illustrate the course of a few of his patients.

He also reported two deaths after appendectomy, in one of which the autopsy revealed acute yellow atrophy of the liver.

Severe Laceration of the Abdominal Muscles.

Dr. Daniel N. Eisendrath reported this case, and exhibited the patient. Patient sustained an injury to the abdominal muscles and was seen two hours after admission to the hospital by the speaker. Over the crest of the ilium a tumor about the size of two fists was found, which was tympanitic on percussion, and which could be replaced. After a more careful examination, a diagnosis of traumatic hernia through the triangle of Petit was made. Other injuries were fractures of the fifth and sixth ribs, with pneumothorax, and dislocation at the outer end of the clavicle. Patient did not give consent to operation shortly after the injury, but did so the next morning. A large incision was made, which extended almost from the anterior superior spine of the ilium down to the middle of Poupart's ligament. Much to the speaker's surprise, upon cutting through the skin he immediately entered the peritoneal cavity, and found very extensive laceration of the abdominal muscles. The skin itself was not contused or abraded. The injury extended so as to involve all the abdominal muscles, the external oblique, the internal oblique, the transversalis fascia and peritoneum, all being torn from the erector spinae muscle down to the internal abdominal ring. There were large pieces of omentum lying in the wound, with extensive contusion of the ascending colon and cecum. He could not suture peritoneum to peritoneum because he could not find where it was in the iliac fossa. At first, he thought of drilling holes through the ilium and bringing sutures through the perforations, but as this would take too long he adopted the plan of using the mattress suture, such as is used by Dr. E. Wyllys Andrews, in the ordinary treatment of a case of inguinal hernia. He went through the gluteal fascia, and then with a mattress suture of kangaroo tendon sutured the muscles and brought them out again through the gluteal fascia, after which they were tied. He brought all of the muscles beyond the crest of the ilium. He used altogether fourteen sutures. The result in this case was excellent. The patient claimed never to have had an inguinal hernia before sustaining this crushing injury, but after the injury a left-sided inguinal hernia made its appearance, which was of considerable size.

Congenital and Infantile Omentocele on Same Side, Separated From Greater Omentum and Peritoneal Cavity.

Dr. Jacob Frank and **Dr. Wm. T. Eckley** presented a joint paper on this subject. In 1901, when operating on a case of left inguinal hernia, an anatomical diagnosis of fatty hernia was made. Unfortunately, a complete history of the case was lost, but the few points of interest in connection with it are these: A swelling in the left inguinal region was first noticed when the patient was three years of age. At the time of the operation he was fifty-four years old. It had grown gradually for about thirty-five years, when it attained the size of an adult head, and remained about that dimension up to the time he consulted Dr. Frank. Occasionally he had symptoms of strangulation which disappeared in a short time. At intervals he had worn a truss, but for many years had not used one. The swelling in this case was diagnosed by many surgeons in America and abroad as hernia, and an operation for the radical cure recommended, but owing to the total absence of any untoward symptoms at the time an operation was advised, but consent was

not given. When the patient was seen for the first time, in May, 1901, the mass was irreducible. There were symptoms of strangulation present, such as pain, tenderness, vomiting, and inability to have a bowel movement. These were relieved with little difficulty by elevating the hips and applying ice-bags to the swelling. The operation was performed several months later, under local cocaine anesthesia, owing to a valvular lesion of the heart and an atheromatous condition of the arteries. Dr. Frank described a few points connected with the operation.

The anatomical features of the case were discussed by Dr. Eckley.

THE PHYSISIANS' CLUB OF CHICAGO.

The regular meeting of the club was held in the banquet hall of the Auditorium Hotel, on Tuesday evening, April 15, 1904. The occasion was a Ladies' Night and the object, namely, to achieve a social success, was fully attained. The reception was held in the hotel parlors on the second floor for about an hour before dinner was served. Each member of the Reception committee wore a white rose and each other member and guest was provided with a red one. The Reception committee consisted of Doctors and Mesdames: Arthur M. Corwin, Charles P. Small, Henry F. Lewis, Robert H. Babcock, Charles S. Bacon, Daniel R. Brower, David W. Graham, E. Fletcher Ingals, G. Frank Lydston, L. Harrison Mettler, Charles E. Paddock, Rudolph Wieser Holmes, Henry Parker Newman, John E. Owens, Emil Ries, James E. Stubbs, Thomas J. Watkins, George W. Webster, John Ridlon, and Doctors: James H. Stowell and Arthur R. Reynolds.

The club's guests of honor were: Mr. and Mrs. Albion W. Small, Mr. and Mrs. Charles Henrotin, Mr. and Mrs. Edgar A. Bancroft, Rev. Frank DuMoulin, Mr. William Buford Carlile, Dr. and Mrs. Charles E. Banks.

The members and their guests discussed a well prepared menu, during which time a quartette of Tomaso's Mandolin Orchestra played in the gallery. Prof. Albion W. Small, of the University of Chicago, the chairman of the evening, introduced, in a happy speech and in a witty vein, the subject, "As Others See Us." Mrs. Charles Henrotin, the president of the Chicago Women's club, was the first speaker. She spoke well and earnestly upon the physician and the medical profession from the viewpoint of the woman and the mother. Mr. Edgar A. Bancroft, the distinguished and eloquent attorney, indulged in some pleasantries at the expense of the doctors which were received with good grace by the company. Rev. Frank Du Moulin, Rector of St. Peter's church, in an excellent speech, told how the clergy look upon the medical profession. Dr. Charles E. Banks, Superintendent of the Chicago Marine Hospital, made answer to the former speakers on behalf of the medical profession in a facetious style which pleased everybody by its quiet humor.

Altogether the occasion was one which might well give pride to the directors and members of the club. The attendance was the largest ever recorded at any meeting of th Physicians' club. One hundred and twenty-eight sat at the tables and about ten or twelve more came in later in the evening to listen to the speeches. This meeting surpassed even the former record breaker, the meeting of November 2, 1903, when one hundred and seven partook of the banquet. The membership of the club is now full to its limit of two hundred and fifty and there are several on the waiting list. The annual meeting will be held on May 31st.

Henry F. Lewis, Secretary.

News Notes.

F. H. Crocker, of Weston, has gone to London, England, for a year's study.

A. B. Middleton, of Pontiac, has been seriously sick, for the past month, with pneumonia.

J. W. Zinn, of Flanagan, is preparing to take a post-graduate course during May and June in Chicago.

Edwin Gaylord, of Pontiac, who is spending the winter in the west, is now sick in a hospital at Hot Springs, Ark.

Dr. S. F. Williams, one of the leading physicians of Casey and a member of Clark County Medical Society, died March 17th of pneumonia.

Dr. E. E. and Mrs. Clark left April 26th for Berlin and Vienna for six or eigth months work in the Eye, Ear, Nose and Throat Clinics of those cities.

Dr. Edward Pearce, one of Marshall's most honored physicians lost his wife March 12th. The local profession deeply sympathize with him in his sore bereavement.

E. J. Carroll, of Graymont, who was recently married to Miss Richardson, of Pontiac, will not move to Bradford. His mother being very sick at his home in Graymont.

The damage suit against Drs. Daly and Fitzpatrick, of Pontiac, was taken from the jury, by Judge Patton, on the last day of the trial and dismissed for lack of evidence introduced by the prosecution.

The Illinois Medical Journal.

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In Spite of Teachers and Text-Books.

The days of the cotton jacket and the linseed poultice seem to be past. Perhaps the applications valued most highly by medical teachers at this time are the cold ones either in the form of ice bags or cold compresses frequently changed. These when placed over the seat of disease, seem to give decided relief, to modify the temperature, and to hasten early resolution. But in spite of their advocacy in the text-books, the rank and file of the profession do not take to them kindly.

Antiphlogistine now enjoys perhaps greater popularity in the treatment of pneumonia and other acute respiratory diseases than any other local application. This popularity seems to be well-deserved. It may not modify the course of the disease to any great extent, but it certainly proves of the greatest comfort to the patient, and helps to ameliorate some of the troublesome symptoms which are characteristic of the disease. Antiphlogistine must therefore be considered a distinct addition to our therapeutic armamentarium.

The Medical Standard, March 1904.

The Treatment of Serous Effusions.

Abstract of a Clinical Lecture Delivered at the Liverpool Royal Infirmary.

The author describes what is evidently a new method of treating serous effusions. The idea occurred to him to inject one fluidrachm of Adrenalin Chloride Solution into the pleural sac, in a case of abdominal cancer extending to the pleura, after the aspiration of a large quantity of bloody serum, the object of the injection being to lesson the secretion. There was no further secretion, consequently no further tapping and the patient spent the remainder of her life in perfect comfort so far as her chest was concerned.

This treatment was extended to cases of ascites due to hepatic cirrhosis in which marked results were not expected. However, the rapidity of secretion was diminished and no ill effects were noted, the quantity of Adrenalin Solution used varying from two to three fluidrachms.

In a case of pericarditis with effusion, in a lad, 19 fluidounces of serum was withdrawn from the pericardium, but a reaccumulation rapidly followed. The patient's condition becoming critical the paracentesis was repeated, 20 ounces of fluid being withdrawn with immediate improvement in the quality of the pulse. Forty minims of Solution Adrenalin Chloride, 1-1000, was injected into the pericardium. The pulse at the wrist disappeared, the boy became of an ashy leaden hue and had an anxious expression. Immediately nitroglycerin and atropin were administered and the boy quickly rallied. No further tapping was required. The same patient had a subsequent attack of left pleurisy with effusion. Ten fluidounces of serum was withdrawn from the chest and one fluidrachm of Adrenalin Chloride Solution was injected. There was no reaccumulation.

In a case of tuburculous peritonitis and ascites 200 fluidounces of serum was drawn and two fluidrachms of Solution Adrenalin Chloride introduced into the peritoneal cavity, with four pints of aseptic air (to prevent adhesions). Thirteen days later 237 fluidounces of serum was withdrawn and two fluidrachms of Adrenalin Chloride Solution and two pints of air were injected. Upon a third occasion, eleven days later, 196 fluidounces of serum was obtained by tapping, and three fluidrachms of Adrenalin Chloride Solution and four pints of sterile air were injected. No reaccumulation of fluid occurred.

A female child of seven years was the next patient. One pint of fluid was withdrawn from her pleural cavity and one fluidrachm of Adrenalin Chloride Solution and half a pint of sterile air were injected. Though it was highly probable that the pleurisy was tuberculous there was no reaccumulation of fluid and the patient recovered.

When Your Case is Weak Abuse the Other Side.

This maxim has been a favorite standby with the legal profession from time immemorial and unfortunately certain pharmaceutical manufacturers have recently seen fit to make use of that maxim. This is particularly true of the manufacturers of a certain iron preparation.

The impudence and effrontery with which these people try to hoodwink the medical profession is rather remarkable.

No other preparation ever came before the medical practitioner with so little detail as to methods of preparation, composition, therapeutic effect, etc., etc., and nevertheless the profession is asked to accept the wildest and most extravagant statements as to its wonder-working capabilities. This is not all. The makers of this preparation, in seeking the support of the profession covertly attack and sling mud at all other iron preparations that have been before the profession for years. They single out Pepto-Mangan, a combination which has stood the tests of the leaders in the scientific medical world both here and abroad, an organic iron combination in which, in its results, the general practitioner and the hospital clinician have learned from experience to place implicit confidence.

This unbusinesslike method of attempting to cast discredit upon other reliable and thoroughly tested combinations we cannot term otherwise than despicable, and furthermore we know our readers cannot be influenced by unsupported statements of financially interested parties, but will always bear in mind that Gude's Pepto-Mangan was submitted to the profession as an organic iron product, and the results obtained by its use, as also the scrutiny of analysis by chemists of repute, substantiate all that has ever been claimed for it.

Attempting to foist upon the attention of the physician a product simply by insinuation that known articles are inferior, is a manner of doing business which should receive the stamp of disapproval by every one of our profession.

Attention is called to the full page advertisement in this issue of the Mey's Chemical Manufacturing Company.

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This company offers to send a small sample and literature free to any physician who will write for it.

Improved Treatment of Cystitis.

The improved methods of diagnosing diseased conditions of the genital tract have rendered the treatment of these conditions satisfactory and effective. The introduction of new remedies calculated to antagonize the causation and spread of infectious diseases follows the discovery of the origin of the infection. The use of formaldehyd and the application of its properties as an antiseptic for internal administration has been in progress for several years. Since the introduction of uriseptin as a remedy in the treatment of bacterial diseases of the uro-genital organs the management of these cases has been greatly facilitated and the response to the treatment has been more prompt and lasting. In cystitis, whether acute or chronic, uriseptin exerts a powerful influence in controlling the formation of pus and reducing inflammatory action. Following the administration of this remedy the urine becomes antiseptic to pyogenic bacteria and is rendered non-irritating to the mucous membrane and the growth of bacteria is inhibited. The liberation of formaldehyd renders the urine sterile and it becomes clear and free from pus and sediments. Uriseptin is also indicated in pyelitis, nephritis, gonnorrhoea, gout, rheumatism, bacteriuria—in fact wherever a urinary antiseptic or uric acid solvent is required.

For Review.

Commoner Diseases of the Eye; How to Detect and How to Treat Them. By Casey A. Wood, C. M., M. D., D. C. L. Professor of Clinical Opthalmology in the University of Illinois, etc., and Thomas A. Woodruff, M. D., C. M., L. R. C. P., Professor of Opthalmology in the Chicago Post-Graduate Medical School, Chicago, etc. 250 Illustrations; 7 Colored Plates. 500 pp. 5x8 in. Bound in Green Buckram, Gold Sidetitle and Top. Press, G. B. Engelhard & Company, Chicago. $1.75 net.

This is the latest book on the eye designed especially for the student and general practitioner. Its many excellent illustrations are nowhere used to better advantage than in the important first chapter, from which we may get clear and concise instructions in the first essential of opthalmology, the methodical examination of the eye.

Points in the diagnosis and treatment of the more usual diseases and injuries of the eye and its appendages, together with the explanation of the principles of refraction as applied to the correction of the various forms of ametropia by glasses, should give the student a fair knowledge of these subjects, and the general physician some help in practice. The chapter: "How to Preserve the Eyesight—The Fundamentals of Ocular Hygiene," is full of valuable information and helpful suggestion.

The recommendation of the acquirement, by all physicians, of sufficient skill in the use of the opthalmoscope to recognize the gross changes in the internal structures of the eye, is of course desirable. The bearing of systemic diseases, on the health of the eyes and the importance of the eye as an index to the general diseases, are clearly and forcibly pointed out.

Altogether, this book fulfils its design to "consider opthalmology from the standpoint of the physician in general practice;" and as such it should be read and its lessons practiced till both knowledge and skill are attained thereby.

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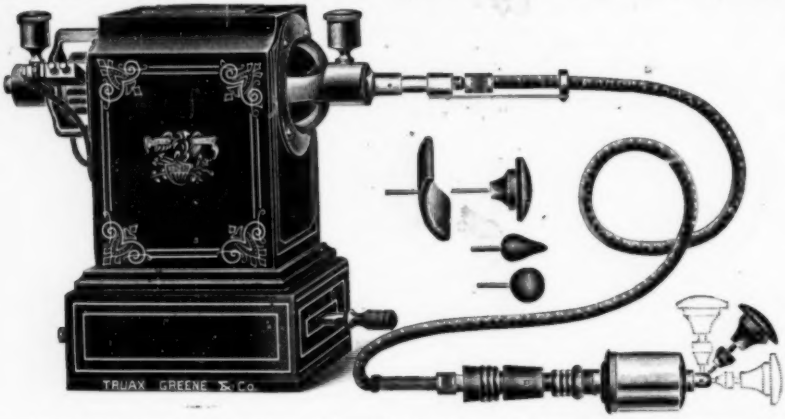

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